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Current perspectives on emergency contraception

對緊急避孕的新觀點

Emergency contraception is safe and effective for preventing an unplanned pregnancy, although it is not widely used. Widespread and appropriate use of emergency contraception should be encouraged as it is a promising means to arrest the increasing abortion rate. It is therefore important for all doctors to be able to prescribe emergency contraceptive pills and to educate women of reproductive age about emergency contraception. This article provides an update on the prescription of emergency contraceptives so that doctors may become more confident at prescribing emergency contraceptives and educating women about this back-up contraceptive. The current changes in the delivery of emergency contraceptive pills from prescription-only through self administration to over-the-counter sales will be discussed.

雖然緊急避孕的使用並不普遍，但這種方法對於防止意外懷孕是安全和有效的。緊急避孕可以防止墮胎率上升，因此應該鼓勵婦女適當地使用緊急避孕。而且對於醫生來說，可以開緊急避孕丸的處方和教育適齡婦女進行緊急避孕是重要的。本文提供了有關緊急避孕的最新資料，使醫生對開緊急避孕丸的處方和教導婦女進行緊急避孕時會更有信心。此外，本文還討論了緊急避孕丸從僅作為處方藥，至可到藥房直接購買的方式的轉變。

Introduction

Unplanned pregnancy is a reproductive health problem of tremendous significance worldwide. Having an unplanned pregnancy can be psychologically distressing for the woman and her family. In Hong Kong, legal abortion is available from gazetted institutions. Surgical abortion, however, carries risks of uterine perforation, cervical damage, bleeding, and infection. Some women may seek illegal abortion, which is associated with a higher risk of complications as the procedure is carried out clandestinely with substandard care. According to the territory-wide surveys conducted by the Family Planning Association of Hong Kong every 5 years from 1982 to 1997, the abortion rate has increased from 13.9% in 1982 to 25.4% in 1997.[1] The proportion of women undergoing legal abortion significantly increased from 38.1% in 1987 to 54.1% in 1997 ($P<0.01$), while the proportion of women undergoing illegal abortion significantly decreased from 21.8% in 1987 to 13.8% in 1997 ($P<0.01$). The proportion of women going to Mainland China for abortion remained static at approximately 30%. All health care providers can contribute to a reduction in the abortion rate and safeguard women's reproductive health by providing emergency contraception and educating women about the use of this emergency method. With judicious use of emergency contraception, most of the unplanned pregnancies could be prevented.

The need for emergency contraception as a back-up has been recognised for many years. The first reported use of emergency contraception was in the early 1960s, when high-dose diethylstilbestrol was given. It was effective but was soon abandoned because of teratogenicity. The Yuzpe regimen was introduced in 1974[2] and is still commonly used nowadays. In 1976, Lippes et al[3] described the use of the copper intrauterine contraceptive device (IUCD) for emergency contraception.[3] Interest in a progestogen-only pill emerged in the 1990s since clinicians wanted to find a method that was more effective and caused fewer side-effects than the Yuzpe regimen.

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Regimens and efficacy

Four methods of emergency contraception are available in different parts of the world: the copper IUCD, Yuzpe regimen, levonorgestrel-only pills, and mifepristone.

Copper intrauterine contraceptive device

Emergency contraception can be achieved by inserting a copper IUCD within 5 days of unprotected intercourse.[4] The copper IUCD has the highest efficacy rate of all emergency contraceptives, with an estimated failure rate of less than 0.1%.[5] The same eligibility criteria apply as for the regular use of the copper IUCD. This method is particularly useful when the woman is considering its use for long-term contraception.

Yuzpe regimen

The original Yuzpe regimen used two doses of ethinyl estradiol 100 μg/levonorgestrel 500 μg 12 hours apart, with the first dose taken within 72 hours of unprotected intercourse.[2] In Hong Kong, there is no designated package for use as emergency contraception. The common practice is to use several tablets from a pack of oral contraceptive pills. The pills that can be used are Neogynon (Schering AG, Berlin, Germany) and Nordiol (Wyeth-Ayerst, Philadelphia, US), each containing ethinyl estradiol 50 μg and levonorgestrel 250 μg. Other pills containing the same amount of ethinyl estradiol and an equivalent dose of progestogen (norgestrel 500 μg) are equally effective, for example Eugynon (Schering AG, Berlin, Germany) and Ovral (Wyeth-Ayerst, Philadelphia, US). Other lower dose combined oral contraceptive pills can also be used. The main side-effects of the Yuzpe regimen are nausea and vomiting.

The overall pregnancy rate when emergency contraception was taken within 72 hours was 3.2%. When pills were taken within 24 hours of unprotected intercourse, the pregnancy rate was 2%, increasing to 4.1% and 4.7% when taken between 25 and 48 hours and between 49 and 72 hours, respectively.[6] Rodrigues et al[7] conducted an observational study of 300 women to compare the efficacy of the Yuzpe regimen taken between 72 and 120 hours after unprotected intercourse versus within 72 hours. The pregnancy rate doubled from 0.8% to 1.8% when emergency contraceptive pills were taken beyond 72 hours.

The first choice of emergency contraceptive to be used between 72 and 120 hours is therefore still the IUCD. If an IUCD is not available, cannot be inserted, or is contraindicated, emergency contraceptive pills should still be given[7] since the chance of pregnancy after an unprotected intercourse around ovulation could be as high as one in three.

Levonorgestrel-only pills

Two doses of levonorgestrel 750 μg taken within 72 hours after unprotected intercourse 12 hours apart was shown to be more effective than the Yuzpe regimen in a double-blind randomised trial.[8] Soon afterwards, the World Health Organization (WHO) conducted a large-scale trial and confirmed that levonorgestrel-only pills were more effective than the Yuzpe regimen. The overall failure rate was 1.1% for levonorgestrel-only pills and 3.2% for the Yuzpe regimen.[6] The effectiveness also varied with time. The failure rate was 0.4% if taken within the first 24 hours and increased to 1.2% between 25 and 48 hours and 2.7% between 49 and 72 hours.[6] A recent study showed that the pharmacokinetics were the same when the second dose of levonorgestrel was taken 12 or 24 hours later.[9] This may help to improve compliance as women could adjust the second dose to a convenient time. A single pill containing levonorgestrel 750 μg has been registered in Hong Kong in July 2002. This includes Norlevo (Laboratoire HRA Pharma, Paris, France) and Postinor-2 (Gedeon Richter, Budapest, Hungary).

Mifepristone

In the earlier trials in the 1990s, mifepristone 600 mg was found to be an effective emergency contraceptive when taken within 72 hours.[10,11] Although there were no major side-effects associated with the use of mifepristone 600 mg, the delay in onset of next menses was worrisome and could also increase the risk of pregnancy should a woman have further unprotected intercourse. Recently, the same effectiveness was demonstrated with the use of mifepristone 10 mg given within 120 hours of unprotected intercourse.[12] The failure rate of this lower dose–extended time regimen was 1.2%. With the use of mifepristone 10 mg, the number of women reporting delayed menses significantly decreased ($P<0.01$).[12] Another obvious benefit of using a lower dose was the cheaper cost of drug. The extended time limit for use was also important. Some women who presented late for emergency contraception (from days 3 to 5) now had an alternative to an IUCD. In one study, when women were given the choice, 93.2% preferred to take mifepristone than to have an IUCD.[13] Mifepristone is not yet available for use as an emergency contraceptive in Hong Kong.

Safety of emergency contraceptive pills

Leading medical organisations have declared the Yuzpe regimen safe and effective. These organisations include the United States Food and Drug Administration (US FDA),[14] WHO,[15] International Planned Parenthood Federation,[16] American College of Obstetricians and Gynecologists,[17] and Royal College of Obstetricians and Gynaecologists (RCOG).[5]

Although the dosage used in the Yuzpe regimen is greater than the daily dose needed for regular contraception, the duration of use is very short and thus does not seem to have the same risk profile.[18] The RCOG and WHO have concluded that there are no contraindications to the Yuzpe regimen, aside from pregnancy.[5,15] Many of the contraindications associated with oral contraceptives are related to the length of exposure, and are therefore not applicable to emergency contraception. Physical and pelvic examinations are not mandatory before a prescription of emergency

contraceptive pills and a pregnancy test is indicated only if the menstrual history is confusing.[4,5]

The levonorgestrel-only pill and mifepristone are even safer because they are oestrogen-free. Physicians may feel more comfortable prescribing them for women with past proven arterial or venous thrombosis or a current attack of migraine with focal aura. No major side-effects have been observed with mifepristone.[10-12]

Pregnancy is a contraindication to the use of emergency contraceptive pills, not because the regimens are dangerous to the pregnant woman or her foetus, but because they are useless when a woman is already pregnant. No studies have ever reported increased teratogenicity in foetuses whose mothers took oral contraceptive pills during pregnancy or after the use of emergency contraceptive pills.[19] The US FDA removed warnings about possible adverse effects to the foetus from the oral contraceptive package insert 5 years ago.[14] There is no evidence to date of a teratogenic effect of mifepristone.[20]

Frequency of use

Emergency contraceptive pills should not replace regular contraception because the cumulative pregnancy rate for frequent use is higher than that of any regular contraceptives. Emergency contraceptive pills can be repeatedly prescribed within the same cycle without adverse effects except for menstrual disturbance. This could be troublesome and anxiety-provoking.

Advice and follow-up

The importance of regular contraception should be discussed and the client should make an informed decision about the contraceptive she prefers. She should be advised to abstain from sex or use a barrier method of contraception for the rest of the cycle after taking emergency contraceptive pills. After using the Yuzpe regimen or levonorgestrel-only pills, the next menstrual period may start earlier, on time, or later, depending on when in the cycle the pills were taken. If the pills were taken early in the proliferative phase, menses could occur earlier than expected, while if they were taken in the secretory phase, menses might be on time or delayed.[2,8,10] The woman should have a pregnancy test if she remains amenorrhoeic 1 week after her next expected menses or if the next menstruation is scanty.

Women who use an IUCD for emergency contraception should be informed of its efficacy as a long-term contraceptive. The onset of the next menses should not be affected. Follow-up should be arranged after the next expected menstruation. Those women who choose to keep the device should subsequently receive the same services as regular users. If removal is requested, this can be done after the next menstruation and an alternative method of contraception should be provided.

Knowledge, attitudes, and practice

Emergency contraception is unpopular worldwide. One survey showed that only 36% of women knew that something could be done after intercourse to prevent pregnancy, and only a small proportion of those who knew about emergency contraception knew they had 72 hours in which to act.[21] In a telephone interview with 798 women in England, only 12% had used emergency contraception at some time.[22] In a local study, only 10% of women who attended a local abortion clinic had ever used emergency contraception.[23] The lack of knowledge of emergency contraception and difficulty in obtaining the pills might hinder its use.

In most countries, Yuzpe or levonorgestrel packaged for emergency contraception is a prescription drug and medical consultation is required. The situation in Hong Kong is similar. Women have to make an appointment with their doctors for emergency contraception. Not all doctors, however, are ready to give emergency contraception, thus women may have difficulty in finding a physician. Next, telling the nurse that one needs an urgent consultation for emergency contraception can be embarrassing. Some women may find it difficult to talk about this and finally decide not to make the request. Sometimes, it can be difficult to get a doctor's appointment within 72 hours, particularly during and after long holidays. With the recent economic recession, some women may have difficulty paying for an expensive doctor's visit. Others may have difficulty taking time-off from work or rescheduling their own work to attend the consultation. It can, therefore, be inconvenient to obtain a prescription for emergency contraceptive pills.

Now, however, the global trend has shifted towards deregulation of emergency contraceptive pills because many clinicians feel that this stringent approach to delivering emergency contraception is unjustified. It has been well documented that emergency contraceptive pills are safe, without contraindications, and simple to administer.

Self-administered emergency contraception

Since the Yuzpe regimen can be safely used by most women and must be administered within a short time, it is important that women can gain immediate access to the pills. The simple solution is to allow emergency contraceptive pills to be sold over-the-counter (OTC). This proposal has invited the criticism that it might promote promiscuity and encourage people to neglect regular contraception.

The intermediate step between prescription-only and OTC sales can be prophylactic prescription of pills for women to keep at home. Self administration of emergency contraceptive pills has been evaluated in various countries.[24-26] A study of self administration of the Yuzpe regimen in 1083 women in Edinburgh showed that self administration increased the use of emergency contraception

without decreasing the use of other contraceptive methods.[24] Having the drugs at home encouraged their use (47% versus 27%; P<0.001) and helped to reduce the number of unplanned pregnancy (18 versus 25; relative risk, 0.7; 95% confidence interval, 0.4-1.2) compared with having to consult a doctor for the drugs. Women who kept a pack of emergency contraceptive pills at home were no more likely to use them more than once than those who had to return to the clinic for a prescription (45 versus 42; P>0.05). Self administration of emergency contraceptive pills was performed correctly at the appropriate time, with no adverse effects. In Ghana, it was also found that self administration of emergency contraceptive pills could be correctly done, while the availability did not increase the incidence of unprotected intercourse.[25] In India, condom users given three courses of the Yuzpe regimen to keep at home were not found to have more unprotected intercourse.[26]

Improving consumers' access to emergency contraception

Education about contraception is important. It is essential for all primary care physicians and gynaecologists to discuss emergency contraception with all sexually active women. Women should know that there is a back-up for contraceptive failure and that they have 72 hours in which to act, with the proviso that the earlier they act the better. It should be stressed that emergency contraception cannot replace regular contraception.

The provision of emergency contraceptive pills OTC may be the most effective means to encourage use. Currently, some countries in Europe are selling emergency contraceptive pills OTC. In France, a postmarketing survey on levonorgestrel-only emergency contraceptive pills showed that in 'real world' administration, the drug was well tolerated and there were no unexpected side-effects. The pregnancy rate was similar to that chronicled in large-scale clinical trials.[27] In England, nurses have been prescribing emergency contraceptive pills since 1992 and self administration started in 1999. Washington State was the first state in the US to deregulate emergency contraception. Pharmacists have made collaborative agreements with physicians to make emergency contraceptive pills (both the Yuzpe regimen and levonorgestrel-only pills) available without a prescription since January 1998. A protocol was issued to pharmacists who joined the programme to ensure safe and consistent practice. No problems have been reported and usage has substantially increased. This approach has provided a safety network for OTC distribution and has been accepted by pharmacists and clinicians in Washington State.[28] Recently, a similar approach has been adopted in California and Hawaii in the US.

Local scenario

The experiences of other countries of self administration and prophylactic prescription suggest a benefit of this method. The results from overseas, however, may not be generated to Hong Kong because of the different social structure.

There could be potential problems with deregulation of emergency contraceptive pills, for example, neglecting regular contraception and relying only on emergency contraceptive pills, sharing of drugs between friends, obtaining the pills without studying important information about their use, or forgetting the exact timing of the regimen if the medication was obtained some time before its use. The groups that may be more likely to abuse or misuse emergency contraceptive pills are young women and those with low motivation for contraception. The Family Planning Association of Hong Kong is therefore conducting a behavioural study to assess self administration among women of reproductive age. The results will give local practitioners a better understanding of the local population and help to decide what is best for their clients.

Conclusions

Emergency contraception is effective at reducing unplanned pregnancy and thus abortion. All doctors should be able to prescribe emergency contraceptives and counsel women about regular contraception. The role of emergency contraception as a safe back-up for contraceptive failure but not a substitute for regular contraception should be emphasised.

Since the effectiveness of emergency contraceptive pills decreases with time, access to emergency contraception must be expedited. This can be achieved by prophylactic prescription or OTC sale of emergency contraceptive pills. These approaches are feasible because the treatment regimen is simple and manageable by most women. The drugs, particularly levonorgestrel-only pills, are safe, without side-effects and contraindications. Which approach is best for the local population remains unknown. Further studies to explore women's attitudes to emergency contraception and how they behave when given emergency contraceptives to keep at home are necessary before making the final decision.

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