Emergency contraception

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Emergency contraception (EC) is an effective way to prevent an unintended or unplanned pregnancy. EC is available in two forms in Canada: a progestin-only method and a combined hormonal method, also known as the Yuzpe regimen. EC has been proven to be most effective within 72 h and up to 120 h after unprotected sexual intercourse. To date, the progestin-only method is the preferred method of EC recommended to teens because it is known for higher efficacy and fewer side effects, and is, therefore, more widely accepted over the combined method. Teens should also be counselled that the progestin-only method is widely available without a doctor's prescription across Canada.

Key Words: Adolescent; Emergency contraception; Plan B; Yuzpe regimen

Emergency contraception (EC) in the present document refers to the use of hormonal medications taken within 72 h and up to 120 h after unprotected or inadequately protected sexual intercourse for the prevention of unintended or unplanned pregnancy (1,2). EC has been in use in North America for more than two decades. Despite this, one American study (3) showed that many adolescent girls are not aware of EC, nor do they know how to obtain it. Often referred to as the 'morning-after pill', EC is very effective at preventing an unintended or unplanned pregnancy. The term 'morning-after pill' should be avoided because the term implies that it can only be used the next day, while EC has been proven to be most effective within 72 h and up to 120 h after unprotected sexual intercourse (4,5). The copper intrauterine device (Cu-IUD) is a mechanical method that can be effective up to seven days after unprotected intercourse, but it is less easily available for adolescents.

ORAL EC

EC is available in two forms in Canada: a progestin-only method marketed under the brand name Plan B (two tablets of 0.75 mg levonorgestrel taken together) (Paladin Labs Inc, Canada) and a combined hormonal method, also known as

La contraception d'urgence

La contraception d'urgence est un moyen efficace de prévenir une grossesse involontaire ou non planifiée. Elle est offerte sous deux formes au Canada : une méthode ne contenant que de la progestine et une méthode hormonale combinée, ou méthode Yuzpe. Il est démontré que la contraception d'urgence est plus efficace dans les 72 heures à 120 heures après des relations sexuelles non protégées. Jusqu'à présent, la méthode ne contenant que de la progestine est privilégiée auprès des adolescentes en raison de sa plus grande efficacité et de son moins grand nombre d'effets secondaires. Elle est donc plus acceptée que la méthode combinée. Les adolescentes devraient également être informées que la méthode ne contenant que de la progestine est largement offerte sans prescription médicale au Canada.

the Yuzpe regimen, which is dispensed in the form of multiple birth control pills (6,7). The Yuzpe regimen contains synthetic estrogen (ethinyl estradiol) and a progestin (usually levonorgestrel or norgestrel) (1). Plan B is known to have fewer side effects and to be more effective; therefore, it is the preferred method. A third form of EC contains an antiprogestin (either mifepristone or ulipristal acetate), but it is not currently available in Canada. Mifepristone is a first-generation progesterone receptor modulator that is approved for use in many countries for early first-trimester medical abortion. Ulipristal acetate is a second-generation progesterone receptor modulator. A recent study (8) investigating the use of ulipristal acetate for EC found it to be highly effective and well tolerated.

The exact mechanism of action for EC regimens is still unknown. Mechanisms of action of both combination and progestin-only EC involve suppressing or delaying the luteinizing hormone peak (9-11), delaying or inhibiting ovulation (12), disrupting follicular development (10) or interfering with the maturation of the corpus luteum (13). Both forms of EC show no evidence of an effect on implantation or postovulatory events (12,14), and they will not interrupt a pregnancy that has already implanted in the uterine lining (2).

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TABLE 1
Situations in which emergency contraceptive pills should be considered

- Totally unprotected intercourse
- Mistimed fertility awareness
- Ejaculation onto genitals
- Coitus interruptus
- Condom breakage, leakage or slippage
- Intrauterine contraceptive device expulsion or midcycle removal
- Dislodgement of diaphragm or cervical cap during intercourse
- Spermicide alone at midcycle
- One or more missed oral contraceptive pills during week 1 of the pill package, or more than two missed oral contraceptive pills during week 2 or 3 of the pill package (33)
- One or more progesterone-only pills is missed or delayed by more than 3 h
- Depot medroxyprogesterone acetate (Depo-Provera [Pfizer Inc, USA]) shot is two or more weeks late
- Transdermal contraceptive patch is detached for 24 h or longer during week 1, or detachment of the transdermal contraceptive patch for 72 h or longer during week 2 or 3 (33)
- Vaginal contraceptive ring is expelled or removed for 3 h or longer during week 1, or removed for 72 h or longer during week 2 or 3 (33)
- Vaginal ring left in for more than five weeks in a row
- The start of a combined hormonal contraception is delayed by 24 h or more (33)
- Sexual assault (not using reliable contraception)
- Condom alone or spermicide alone plus recent teratogen exposure (eg, Accutane [Roche, Canada])
- Advance prescription for any girl who does not want to become pregnant and who may find herself in one of the above situations

The general recommendations for teens who have missed hormonal contraceptives (COC, Depo-Provera [Pfizer Inc, USA], transdermal contraceptive patch or vaginal contraceptive ring) have become complex, both for health care providers and teens. For specific recommendations, please refer to the Society of Obstetricians and Gynaecologists of Canada's committee opinion on "Missed hormonal contraceptives: New recommendations" (33)

Studies (15) indicate that hormonal EC is very effective. Without intervention, eight in 100 women will become pregnant after a single act of unprotected sexual intercourse during the middle two weeks of the menstrual cycle. Studies (7) have shown that the progestin-only method has lower pregnancy rates than the combined hormonal method; pregnancy rates vary between 1% and 3% in women who have used the progestin-only method (16,17), while pregnancy rates between 3% and 7% have been reported with the combined hormonal method (16,18).

WHO CAN USE ORAL EC

Preteens and adolescent girls who have attained menarche and have had consensual or nonconsensual unprotected sexual intercourse can be given EC (Table 1). There are no absolute contraindications to the use of the combined EC or the progestin-only EC except for known pregnancy (making EC ineffective) or known allergy to one of the components of the product (19). The daily use of combined oral contraceptives (COCs) is contraindicated in adolescents with a history of deep vein thrombosis, pulmonary embolism or stroke, known thrombophilia or migraines with neurological symptoms. In these clinical situations, it would be prudent to choose a progestin-only EC regimen, which has no

theoretical risks. The use of combined hormonal EC can be offered when the progestin-only EC regimen is unavailable.

WHEN TO TAKE ORAL EC

EC can be used at any time during the menstrual cycle. Both methods of EC are most effective the sooner the pills are taken after unprotected sexual intercourse. Studies have shown that the timing of administration of both the progestin-only and combined hormonal methods should occur within the first 72 h; however, it can still prevent pregnancy beyond the 72 h window and within 120 h of unprotected sexual intercourse (4,5). If a female adolescent presents after three days, EC can be given up to 120 h after sexual intercourse, as long as the girl is informed that the EC has less chance of being effective. A Cu-IUD, if available, is a better option (see below).

The provision of EC should not be dependent on whether an adolescent is receiving comprehensive health care. Health care providers should provide EC without requiring female adolescents to receive a pregnancy test, pelvic examination, Pap smear or sexually transmitted infection (STI)/HIV testing, unless indicated.

HOW TO PRESCRIBE ORAL EC

EC, specifically the progestin-only method or Plan B, is now available without a doctor's prescription across Canada. The progestin-only method or Plan B can be obtained from pharmacists over the counter (OTC). Despite this, health care providers should consider having EC available in their respective clinic setting to avoid barriers to obtaining EC.

The current recommendation is to take two pills (0.75 mg levonorgestrel each) at once, compared with the original recommendation, which was to take one pill and then another 12 h later (5). Taking two pills at one time is as effective as taking the pills 12 h apart, does not cause an increase in adverse effects and significantly improves adherence.

The combined hormonal regimen consists of two tablets of high-dose norgestrel (250 µg)-ethinyl estradiol (50 µg) (Ovral, [Wyeth, Canada]), repeated 12 h later and can be given with 50 mg dimenhydrinate initially. For this regimen, the timing of the second dose is important. For practical reasons, the first pill(s) can be delayed so that both doses are given during the teen's normal waking hours. If the second set is missed, the entire course must be repeated.

It has been suggested that if norgestrel-ethinyl estradiol is not available, two doses 12 h apart of four or five low-dose oral contraceptive pills (2,20) can be used instead. Although nausea is much less common with levonorgestrel only (Plan B), almost one-quarter of women report some nausea. The manufacturer does not make a recommendation regarding concurrent administration of 50 mg dimenhydrinate, but there is no evidence to suggest that it interferes with the efficacy of EC.

TEENS CAN USE OTC EC CORRECTLY

Studies have shown that teenagers can use the OTC progestin-only method or Plan B appropriately in the

absence of medical evaluation and counselling (21-23). This method is very easy to use and does not require clinical screening recommended for other hormonal methods of contraception. Furthermore, professional monitoring has no impact on EC effectiveness or side effects.

SHORT- AND LONG-TERM EFFECTS

A recent study (24) in teens evaluated the tolerability of progestin-only EC (given in two doses), and reported that the most common adverse effects in the first week included headache (50%), fatigue (21%), nausea (38%) and dizziness (27%) (16). Nevertheless, the progestin-only method is better tolerated than the combination hormone or the Yuzpe method. Menses returned within seven days of the anticipated date in 62.5% of participants.

Nausea and vomiting are frequent side effects when estrogen-containing EC is given without antiemetics. To increase the efficacy of the antiemetic, it can be given 1 h before the combined hormonal method. Giving the antiemetic after nausea occurs is not helpful. Adolescent girls who vomit in less than 1 h after taking their dose of EC should retake it. If vomiting occurs more than 1 h after, they do not need to retake the pills because absorption has occurred, and the nausea and/or vomiting are likely to be a result of treatment.

Given that no teratogenic risk has been found with pregnancies that occur while women are taking high-dose birth control pills, it is unlikely that there is an increased risk of birth defects in babies born to adolescent girls who have taken EC during pregnancy. A recent prospective cohort study (25) found no association between the use of levonorgestrel or Plan B, and the risk of major congenital malformations, pregnancy complications or any adverse pregnancy outcomes.

The evidence indicates that the efficacy of COCs is reduced when taken concurrently with some antiepileptic drugs, St John's wort, medications to treat HIV, rifampin and griseofulvin (2), suggesting a similar potential for the combination EC. However, to date, there is no evidence that concurrent use of these medications reduces the efficacy of the progestin-only method.

NONHORMONAL EC

A Cu-IUD is a highly effective method of EC that can be used within 120 h of unprotected or inadequately protected sexual intercourse. It can be considered for use up to seven days after unprotected sexual intercourse in women who are in a stable, mutually monogamous relationship and at low risk for STIs. However, it may not be available in the offices of health care providers or emergency rooms. If it is believed that a Cu-IUD is the only option, a pre-existing pregnancy should be excluded; therefore, a urine pregnancy test or serum human chorionic gonadotropin test should be performed. In addition, at the time of insertion, endocervical specimens should be taken to test for chlamydia and gonorrhea. Prophylactic antibiotic coverage for both of these infectious agents should be considered (20). The Cu-IUD can be removed

during or after the next period. The efficacy of the levonorgestrel intrauterine device has not been assessed, so it should not be used as postcoital EC.

ACCESSIBILITY AND CONFIDENTIALITY

Many teens remain unaware of EC. According to one study (3), of 71% of sexually experienced inner-city teens in the United States, only 30% were aware of EC. Another study (26) demonstrated that 76% of college students had heard of EC, and that 13% had used them but demonstrated a general lack of knowledge about EC and misconceptions about their safety.

Adolescents face a variety of complex cultural, financial, psychological and social barriers to accessing EC information and services. Some of the barriers to EC use include the adolescent's perceived pregnancy risk, motivation to prevent pregnancy, knowledge about EC (3), how and where to obtain it, having the resources (including financial) needed to obtain it, geographical limitations (rural versus urban teens), physician's lack of knowledge about and experience using EC (27), and pharmacists' perceived lack of preparedness to meet the adolescent's needs.

Awareness and easy access to EC does not increase rates of sexual activity or increase the frequency of unprotected sexual intercourse among adolescents (28,29). Health care providers and pharmacists are encouraged to establish written protocols to avoid barriers to obtaining EC irrespective of the individual health care provider's or pharmacist's personal attitudes and beliefs (30). Such protocols would also be particularly helpful for telephone triage and the prescription of EC over the phone whenever necessary.

Finally, EC must be accessible to adolescents in a way that respects their right to privacy, including their right to make responsible and informed decisions with respect to the prevention of an unintended pregnancy. Adolescents' strong need for privacy can prevent them from seeking assistance from any health care provider. It is, therefore, essential that health care providers and pharmacists maintain confidentiality when providing EC.

CLINICAL PRACTICE POINTS

Anticipatory guidance

Adolescent health care providers should counsel adolescents – regardless of sex or current method of contraception – about EC during acute and routine health care visits. The health care provider should take into consideration the adolescent's age, developmental stage, sexual orientation, sexual history, history of chronic illness and current medications (31).

Counselling regarding EC should include a description of the method, the mechanism of action, indications for use, efficacy, safety, common side effects, time limits for use, and where and how to obtain the method. This is also an opportunity to initiate a discussion on effective methods of contraception and safe sexual behaviours. It is important for the health care provider to emphasize that EC is a method for preventing an unintended or unplanned pregnancy, and is

for emergency use only. Health care providers should counsel all female adolescents being treated for sexual assault about EC and offer it to them.

History and physical examination

Adolescent girls may come specifically for EC, or an indication for EC may be discovered during routine history taking. In either case, the date and nature of the last menstrual period should be elicited, as well as when the teen had sexual intercourse in relation to that menstrual period. She should also be asked about her history of contraceptive use and history of contraindications to COC. Physical examination should include determination of blood pressure. Pelvic examination is indicated if the last menstrual period was unusual and the physician suspects that the patient is pregnant or has concerns about STIs. If a pelvic examination is performed, specimens should be taken for chlamydia and gonorrhea cultures, as well as a Pap smear, according to provincial or national recommendations.

Discussion with the teen

After determining whether EC is indicated, explain the method to the adolescent and the possibility of failure of the method. Explain that the next period might be early, on time or late. Discuss her options should she become pregnant (see statement on "Adolescent pregnancy" [32]). Explain that if she is going to have sexual intercourse before her next period, she should use a barrier method with a spermicide; she may be at risk for pregnancy in the first few days after completing EC treatment because one of the primary ways that EC works is by delaying ovulation. If the patient is taking EC because she has missed birth control pills, or because she wants to start to take the pill and has no contraindications, she can start a new pack of pills the day after she takes EC. She should be told that ECs do not prevent or treat STIs.

Because EC is not 100% effective, follow-up is important. The adolescent should be commended for coming in for EC. Teens should be advised to return for a pregnancy test if their next period is more than one week late or if the next period is unusual in any way. They should also return if they have heavy bleeding or pain. An appointment can be scheduled for one week after the next expected menstrual period. This appointment is an opportune time for counseling the teen about her choices regarding sexual activity, contraception, STIs and safer sex. If she chooses oral contraceptives, pills and condoms can be given to her with instructions.

RECOMMENDATIONS

- Given that EC is an effective way to decrease the chances of a pregnancy following unprotected sexual intercourse, paediatricians, family physicians and nurses should routinely provide information and counselling about EC to adolescents regardless of sex or current method of contraception. This information should be communicated at routine visits through a variety of modalities including discussion, posters and pamphlets.

Information about websites and information hotlines should also be given to the adolescents.

- Paediatricians, family physicians and advanced practice nurses should consider having EC available in their respective clinical settings to give to teens at risk for unwanted pregnancy.
- To date, the progestin-only method or Plan B is the preferred method of EC recommended to teens because it is known for higher efficacy and fewer side effects, and is, therefore, more widely accepted over the combined method.
- The progestin-only method or Plan B should be taken as two pills (0.75 mg levonorgestrel each) at one time.
- Teens should also be counselled that the progestin-only method or Plan B is widely available without a doctor's prescription across Canada, and that it can be obtained from pharmacists OTC.

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