



Research Update

Emergency contraception in Canada: An overview and recent developments

Anna Pancham¹ and Sheila Dunn²

¹Planning and Policy, Toronto Public Health, Toronto, ON.

²Bay Centre for Birth Control; Department of Family and Community Medicine, University of Toronto, Toronto, ON.

Abstract: Emergency contraception (EC) is used to decrease the risk of pregnancy after unprotected sexual intercourse. There are two types of EC: emergency contraceptive pills (ECPs), and the post-coital copper intrauterine device (IUD). ECPs are more commonly used and can reduce the risk of pregnancy by 75- 89%. Although they may be effective if used up to 5 days after intercourse, ECPs are more effective the sooner they are used. This medication is extremely safe and will not harm an existing pregnancy. Repeated use of ECPs poses no known health risks; however, ongoing forms of birth control will be more effective. ECPs do not provide protection against sexually transmitted infections. Improving access to ECPs is a priority for health care advocates. In Canada in 2005, the regulatory status of Plan B®, the most commonly used ECP, changed to enable access without a prescription. As a Schedule II medication, a woman needs only to request it from a pharmacist. Although this has removed one barrier, in some provinces it has resulted in a new barrier; increased cost due to the addition of a fee for counselling by a pharmacist. Some have advocated further deregulation to "on the shelf" (which would not require consultation with a pharmacist), while others maintain that the assessment and counselling by a pharmacist are essential for safe and appropriate use. To further promote appropriate use of emergency contraception, strategies are needed to eliminate barriers to use, increase emergency contraception knowledge and awareness, and assist women to identify their risk for pregnancy.

Introduction

Emergency Contraception (EC) is an essential contraceptive option available to women in Canada. EC methods have changed over the years as has the regulatory status of the most commonly used product. This article will provide an overview of EC and highlight recent developments.

Regardless of the abundance of birth control methods available, these methods are not perfect nor are the people who use them. All contraceptive methods can fail even when used properly and consistently. Approximately half of pregnancies are not planned and about half of those are not wanted (Henshaw, 1998). In 2004, there were over 100,000 abortions performed in Canada (Statistics Canada, 2004). Unintended pregnancies and abortions have significant emotional, social and economic consequences.

The most common reason for unintended pregnancy is that contraception is not used at all or is used incorrectly (Jones, Darroch, & Henshaw, 2002). EC is a woman's back-up contraception in these circumstances. Although all women should be aware of EC as a back-up contraceptive method, women who use barrier methods such as condoms which can slip or tear, should incorporate EC into their regular contraceptive plan (i.e. condoms with EC back-up as needed).

While thought of as a back-up method, use of EC may be a first step toward a woman initiating regular contraception. A number of studies of women who used EC have found that some had subsequently adopted more effective ongoing contraception (Glasier & Baird, 1998).



What is emergency contraception?

EC is any form of birth control used after intercourse but before implantation. There is a misconception that EC causes abortion. EC will not disrupt an established pregnancy; it prevents pregnancy only.

Emergency contraception options

There are two types of EC: hormonal, also known as the emergency contraceptive pill (ECP) or the “morning after pill”; and the post-coital copper intrauterine device (IUD). ECPs are by far the most common method of EC.

Emergency contraceptive pills: There are two types of ECPs currently available in Canada: (i) combined estrogen and progestin and (ii) progestin-only. ECPs are recommended for use within 3 days of unprotected intercourse although evidence shows that ECPs are effective up to 5 days (Arowojolu, Okewole, & Adekunle, 2002; Ellertson et al., 2003; Rodrigues, Grou, & Joly, 2001; Von Hertzen et al., 2002).

- (i) The combined estrogen and progestin regimen consists of taking two doses of estrogen and progestin 12 hours apart. This method of EC has been used since the early 1970s and is referred to as the Yuzpe method after the Canadian physician who pioneered research on this use of contraceptive hormones. The most common brand used for the combined hormonal regimen is Ovral®, an older higher dose birth control pill. Other birth control pills can also be used as ECPs by increasing the usual dose (e.g. 3 or 4 pills now, and repeat in 12 hours, the quantity depending on the brand). This regimen may not provide exactly the same dose as Ovral® but it is nevertheless effective. Neither Ovral® nor other birth control pills are specifically approved for use as ECPs in Canada although they are widely used for this purpose.
- (ii) The progestin-only regimen consists of taking the progestin levonorgestrel as either two doses of 0.75 mg taken 12 hours apart (the original instructions) or in one dose of 1.5 g (approved by Health Canada in 2007). Plan B® (brand name) was first introduced in 2000 in Canada and is the only product specifically approved for

EC use in Canada. Consequently, Plan B® is likely the most commonly used ECP currently in Canada (Soon, Levine, Osmond, Ensom, & Fielding, 2005).

Post-coital copper IUD: Inserting an IUD within 5 to 7 days of unprotected sex has been shown to prevent pregnancy (Fasoli, Parazzini, Cecchetti, & La Vecchia, 1989; Lippes, Malik, & Tatum, 1976; Zhou & Ziao, 2001). The post-coital IUD is an excellent option for women who exceed the time when hormonal EC is most effective and can be left in place to provide ongoing contraception if desired.

How does emergency contraception work?

The main mechanism of action of hormonal EC is through delay or interference with ovulation (Okewole et al., 2007). Other mechanisms that may come into play depending on when in the menstrual cycle ECP is taken include: interference with mobility of sperm or ova, alteration of the endometrial lining, changing cervical mucous or impacting zygote development, transport or adhesion (Croxatto et al., 2001).

How effective is emergency contraception?

Theoretically, if 100 women had unprotected intercourse once during the second or third week of their menstrual cycle, about 8 would become pregnant (Dunn & Guilbert, 2003). The Yuzpe and progestin-only regimens reduce the risk of pregnancy by 75% to 89% respectively (Ho & Kwan, 1993; Task Force on Postovulatory Methods of Fertility Regulation, 1998; Trussell, Rodriguez, & Ellertson, 1998; 1999). Thus, following treatment with ECP, only 1 or 2 women out of 100 would become pregnant.

ECPs are more effective the sooner they are taken following unprotected intercourse; efficacy declines significantly as the delay between intercourse and treatment increases (Task Force on Postovulatory Methods of Fertility Regulation, 1998).

Post-coital IUDs have been shown to be more effective than ECPs. An IUD inserted within 5 days of unprotected intercourse has an efficacy rate of 98.7% (Trussell & Ellertson, 1995).



How safe is emergency contraception?

There are no contraindications to using ECPs with the exception of a known pregnancy and this is only because the treatment will not be effective. Birth defects have not been shown to be associated with inadvertent exposure to hormones contained in ECPs during pregnancy (Bracken, 1990). Although ECPs are not recommended as a regular form of contraception, repeat use of ECP poses no known health risks (Dunn & Guilbert, 2003). A post-coital IUD can be used as safely as one used for regular contraception, provided the guidelines for its appropriate use are followed e.g. no history of recent pelvic inflammatory disease, no current vaginal or cervical infection, and low risk of sexually transmitted infection (STI) (Dunn & Guilbert, 2003).

ECPs do not provide protection against STI. This information needs to accompany treatment since women needing emergency contraception may also be at risk for STI.

When should emergency contraception be used?

ECPs should be considered if a woman has had unprotected or inadequately protected intercourse within 5 days (Dunn & Guilbert, 2003). IUDs can be considered up to 7 days following intercourse. Unprotected intercourse can include: no contraception used, condom failure, dislodgement of a diaphragm or cervical cap, missed birth control pills, late contraception injection, ejaculation on external genitals or sexual assault when the woman is not using reliable contraception (Dunn & Guilbert, 2003).

ECPs are not suitable as regular contraception. A cohort study of women using only post-coital levonorgestrel for 6 months found unacceptably high failure rates and problematic irregular bleeding (United Nations Development Programme Task Force, 2000).

Regulatory status

Until 2005, ECP was a prescription medication (Schedule I). Therefore, a woman could only access this medication after consultation with a licensed prescriber, usually a doctor.

In Canada in 2005, Plan B® was changed to a “behind the counter” medication (Schedule II). Consequently

a woman no longer requires a prescription to obtain Plan B® but can request it directly from a pharmacist. This new regulatory status eliminates the delay involved in obtaining a physician’s prescription. Furthermore, pharmacies are usually conveniently located and often have hours of operation that include evenings and weekends. Research has shown a reduction in time to first dose of ECPs associated with availability in pharmacies (Killick & Irving, 2004). However, in many provinces a pharmacist counselling fee is now added to the cost of the medication, increasing the overall cost to the consumer. Although women have been generally enthusiastic about pharmacist provision of ECPs, access still requires a conversation with a pharmacist, which some women may find uncomfortable (Erdman & Cook, 2006).

Factors limiting effective use

EC has become more available in many countries including Canada and this has led to increased use (Raymond, Trussell, & Polis, 2007; Soon et al., 2005). However to date, an impact on abortion rates has not been demonstrated (Raymond, Trussell, & Polis, 2007). Reasons for this are uncertain but some authors have suggested that EC may be less effective than previously thought, or that women do not use it every time it is indicated (Raymond et al., 2007). A number of barriers remain that limit the potential to further improve use of EC.

Awareness: A fundamental requirement for use is knowledge about EC; what it is, when it should be used and where to get it. Women won’t access EC if they don’t know about it or have negative attitudes towards it. The 2002 *Canadian Contraception Study* showed that only 57% of women were ‘familiar’ with EC (Fisher, Boroditsky, & Morris, 2004). A small study of ethnically diverse women in Vancouver showed that many women had misperceptions about EC, believing that it was an abortifacient or that it had long term health impacts (Shoveller, Chabot, Soon, & Levine, 2007).

Access: Effective use of EC necessitates convenient access to it. Women living in rural areas have fewer options for obtaining EC and doing so discretely. Ensuring adequate access to EC may require that women purchase ECPs in advance of need. Women



who have EC in advance of need are more likely to use it than those who need to seek it out when they are in need (Glasier & Baird, 1998; Raymond, Trussell, & Polis, 2007). Concerns that easy access may lead to risky sexual behaviour have not been born out (Raymond et al., 2007).

Cost: Although the scheduling change of Plan B® to Schedule II across Canada has improved access by eliminating the need for a prescription, many pharmacists now charge a professional fee for providing it and this has imposed a new cost barrier to access for some women. While some provincial health plans cover pharmacists' fees for EC, in most provinces women bear the cost of this consultation.

Risk identification: In order to seek out EC women also need to identify their need for it and be motivated to act. A large French study of women attending abortion clinics showed that although many could identify when they conceived, most did not believe at the time that they were at risk of pregnancy (Moreau, Bouyer, Goulard, & Bajos, 2005). Women who were single, childless or had experienced unwanted intercourse were most aware of their risk. Women's perception of risk of pregnancy is an area of ongoing research.

The future of emergency contraception: Efficacy and access

With Health Canada's approval of one dose of 1.5 mg levonorgestrel for EC, dosing has been simplified. This may improve efficacy of the medication by increasing the percentage of users who take it correctly. Efforts to discover a more effective form of emergency contraceptive pill continue. Mifepristone (RU 486), a drug unavailable in Canada that is best known for its role in medical abortion, is also a very effective post-coital contraceptive when used in very low doses (von Hertzen et al., 2002).

The debate around further reducing barriers to access by changing the scheduling of Plan B® to "on the shelf" (Schedule III) continues. This would eliminate the need to interact with a healthcare professional to obtain the medication, although a pharmacist would be available for consultation. Advocates for this argue that imposing a mandatory pharmacist consultation (and its associated fee) on women is an unnecessary

barrier that interferes with their access to this important therapy (Erdman & Cook, 2006). Others argue that a pharmacist assessment and counselling is required so that women do not use the drug inappropriately and to promote use of regular contraception and strategies to reduce their risk for sexually transmitted infections.

However, even if a regulatory change is made, it will still be difficult for some women, especially those living in rural areas, to access ECP in an acceptably private manner and within the constraints imposed by limited hours of operation in rural pharmacies. As well, health promotion strategies that provide targeted information and efforts to reduce cost barriers will be needed to ensure that EC is accessible to all women.

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