

# Evidence-based clinical update

## No. 1: Emergency contraception

### Fast facts about emergency contraception (EC)

- EC is taken AFTER unprotected sex to prevent pregnancy. EC cannot terminate an established pregnancy.
- EC has the potential to significantly reduce the incidence of unintended pregnancy and the consequent need for abortion.\*
- There are three types of emergency contraception:
  - Combined birth-control pills containing both the hormones estrogen and progestin
  - Pills containing progestin only
  - Copper-bearing IUDs\*\*
- EC can be initiated up to 120 hours (five days) after unprotected sex.
  - Copper-bearing IUDs can be inserted up to the time of implantation, which occurs five to seven days after ovulation.
- No serious complications have been causally linked to EC.
- EC is safe for women of all ages. Very few women know EC is available, effective and safe.
- Increasing access to EC does not decrease condom use.
- EC does not protect against sexually transmitted infections, including HIV.
- Teen and adult women who have EC on hand are more likely to use it, do not engage in more risky sexual behavior and do not have higher rates of sexually transmitted infections than women who do not have EC readily available.

\* Two recent studies suggest that emergency contraception pills (ECPs) decrease neither pregnancy nor abortion rates. In the studies, women who became pregnant did not use EC each time they had unprotected sex or their birth control failed. Without more widespread and consistent use of EC, it is unrealistic to expect to see an impact on “macro” indicators like pregnancy and abortion rates.<sup>1</sup>

\*\* This update focuses on ECPs. For a brief summary on copper-bearing IUDs, see “Key points on copper-bearing IUDs,” also in this issue.

## Emergency contraceptive pills (ECPs): An introduction

### Key points

- ECPs can be taken immediately after intercourse or up to 120 hours (five days) afterward.
- Progestin-only pills can be taken in a single 1.5mg dose or in two 0.75mg doses 12 hours apart.

There are two types of ECPs: those that contain both estrogen and progestin, and those that are progestin only. The progestin-only ECPs are currently more widely used because they are more effective and cause fewer side effects than the combined hormonal pills. ECPs are often called the “morning-after pill,” but the term is misleading: ECPs can be taken immediately after unprotected intercourse or up to 120 hours afterward.

Only one progestin, levonorgestrel, has been studied for free-standing use as a progestin-only ECP. Originally, the recommendation for treatment was one 0.75mg dose within 72 hours after unprotected intercourse and a second 0.75mg dose 12 hours later. However, recent research shows that a single 1.5mg dose (i.e., two 0.75mg pills) is as effective and causes no more side effects than two 0.75mg doses 12 hours apart.<sup>2,4</sup>

Combined ECPs are ordinary birth-control pills that contain estrogen and progestin. The hormones that have been most studied in combined ECP trials are estrogen (ethinyl estradiol) and progestin (levonorgestrel and norgestrel). A combination of these active ingredients used as emergency contraception is referred to as the “Yuzpe method.” Recent research has demonstrated the safety and efficacy of a modified Yuzpe regimen containing ethinyl estradiol and the progestin norethindrone.<sup>2,5</sup> Findings suggest that oral contraceptive pills containing progestins other than levonorgestrel may be used as effective emergency contraception when the standard Yuzpe regimen is not available.<sup>2</sup>

## How do ECPs work?

### Key point

- ECPs **prevent** pregnancy. They **DO NOT** cause abortions.

Like all hormonal contraceptives, ECPs work in a variety of ways. The precise mechanism of action of ECPs in a particular case depends on when the ECPs were taken and the time in a woman’s menstrual cycle when intercourse occurred.<sup>6,7</sup> Several studies have provided evidence that both the combined regimen and the levonorgestrel regimen can prevent or delay ovulation. Evidence

also suggests that ECPs interfere with sperm transport and/or egg penetration. Evidence for other mechanisms of action is scarce and inconclusive.<sup>2</sup>

## How effective is emergency contraception?

### Key points

- Progestin-only pills reduce the risk of pregnancy by 59 to 94 percent.
- Progestin-only pills are more effective than the combined method in preventing pregnancy.
- Both methods are more effective the sooner they are taken after intercourse.
- After ECP use, if a menstrual period has not come within a week after it is expected, evaluation and care for possible pregnancy may be needed.

Studies have shown that the progestin-only regimen reduces the risk of pregnancy by 59 to 94 percent after a single act of intercourse,<sup>2,4</sup> whereas the combined regimen reduces it by 56 to 89 percent.<sup>8</sup> When comparing the regimens, research shows that women who receive the combined hormonal regimen are almost twice as likely to become pregnant than women who receive the levonorgestrel regimen.<sup>2</sup> Both regimens appear to be more effective the sooner they are taken after intercourse.<sup>5,9</sup>

Early studies showed that both regimens are effective only when used up to 72 hours after intercourse.<sup>10</sup> Consequently, some product package instructions and older guidelines advise use only within that time frame. More recent studies, however, indicate that the regimens continue to be moderately effective if started between 72 and 120 hours after intercourse.<sup>9,11,12</sup> No data are available on efficacy if treatment is started more than 120 hours after intercourse.<sup>2</sup> ECPs are not as effective as consistent and correct use of most modern contraceptive methods.

## Does ECP use cause side effects?

### Key points

- Progestin-only pills cause significantly less nausea and vomiting than the combined regimen.
- If a woman vomits within two hours of taking ECPs, she should repeat the dose.
- ECPs may be used as frequently as requested. However, ongoing, correct use of modern contraception provides better protection from unintended pregnancy.

While no serious complications have been causally linked to ECPs, side effects of both regimens include nausea and vomiting. These effects, however, usually do not last more than a few days after treatment and are generally resolved within 24 hours.<sup>2</sup> The progestin-only method has been shown to cause significantly less nausea and vomiting than the combined regimen.<sup>10</sup>

Nausea and vomiting are uncommon enough with the progestin-only regimen that prophylactic administration of an antiemetic drug is not routinely warranted. Pretreatment with antiemetic drugs can prevent these symptoms in users of the combined regimen, though it is not possible to predict which ECP users will have nausea or vomiting or who will benefit from pre-treatment. A single 50mg dose of meclizine, taken one hour before the first dose of the combined regimen, reduces the risk of nausea by about 30 percent and the risk of vomiting by about 60 percent.<sup>1</sup> Women who use meclizine should be warned that it might cause drowsiness. Taking ECPs with food has not been shown to alter the risk of nausea. If a woman vomits within two hours of taking an ECP dose, many experts believe the dose should be repeated. In cases of severe vomiting, ECPs can be administered vaginally.<sup>1</sup>

Other side effects include abdominal pain, breast tenderness, headache, dizziness, fatigue and irregular vaginal spotting or bleeding.<sup>1,2</sup> A nonprescription pain reliever can reduce discomfort from headaches or breast tenderness. Irregular bleeding caused by ECPs is not dangerous and will resolve without treatment. However, irregular bleeding after ECP use may be a result of another more serious condition, such as ectopic pregnancy. If the woman has other symptoms of ectopic pregnancy, such as lower abdominal pain, it may be helpful to perform a pregnancy test and/or other appropriate tests to detect the problem.<sup>1</sup>

## Are there times when ECPs are not appropriate?

*The short answer is no.*

- **Breastfeeding:** There is no evidence that ECPs will harm a breastfeeding woman or her infant.<sup>1</sup> While exclusive breastfeeding can be used as a contraceptive method for the first six months postpartum, this method is imperfect; breastfeeding women may still be ovulatory and need ECPs. A single treatment of ECPs is unlikely to have a significant effect on milk quantity or quality. To prevent any hormones from passing into the breast milk, some experts recommend that nursing women feed their baby immediately before taking ECPs, and then express and discard the breast milk for the next six hours.<sup>1</sup> The need for this practice, however, has not been proven.
- **Coital act(s) more than 120 hours in the past:** No data exist showing efficacy of ECPs if started more than 120 hours after intercourse.<sup>1</sup> Since ECPs pose no danger to the woman or embryo, however, treatment can be provided along with counseling about the possibility of pregnancy. If the earliest unprotected act occurred within the past seven days, a more effective approach might be to insert a copper-bearing IUD.
- **More than one previous unprotected act:** One ECP treatment may be used to cover all unprotected sexual acts within the past 120 hours. However, the efficacy of the ECPs will decline as the interval between the earliest coital act and the use of ECPs lengthens.<sup>1</sup>
- **Repeated ECP use:** ECPs are not intended for repeated use, and no direct data are available about the effects of frequent use. However, experience with similar regimens and with high-dose oral contraceptives suggests that the likelihood of harm from limited repeat use is low.<sup>1</sup> ECPs should not be

denied just because a woman has used them before, even if she has used them within the same menstrual cycle. ECPs may be used as frequently as requested, but ongoing, correct use of other modern contraceptive methods is more effective over time.

- **Concurrent use of other drugs:** No specific data are available about the interactions of ECPs with other drugs. However, any drug interactions that do occur should be similar to those with regular oral contraceptive pills. Drugs that may reduce the efficacy of oral contraceptives, including but not limited to rifampicin and certain anti-convulsant drugs, may also reduce the efficacy of ECPs.<sup>1</sup>
- **Effects on pregnancy:** Results from studies of high-dose oral contraceptives suggest that neither the pregnant woman nor the fetus will be harmed if ECPs are inadvertently used during early pregnancy. Available evidence also suggests that ECPs do not increase the chance that a pregnancy after ECP use will be ectopic. In fact, ECPs reduce the absolute risk of ectopic pregnancy by preventing pregnancy in many cases.<sup>1</sup>

### Action steps for clinicians prescribing ECPs

- Ensure that all office staff members, particularly individuals answering the telephone, know that you provide EC.
- Routinely discuss EC with patients.
- Advertise the availability of emergency contraception in your office or clinic.
- Provide ECPs in advance to patients.
- Do not require a routine screening by examination or laboratory tests before prescribing ECPs.
- Provide ECPs even if a pregnancy test cannot be performed, as there is no evidence that ECPs will harm the woman or a possible existing pregnancy.
- Prescribe ECPs by telephone to patients.
- Discuss antinausea medicines with patients.
- Consider extending the 72-hour window to 120 hours when prescribing ECPs.
- Take advantage of the opportunity to discuss initiation and/or the correct use of long-term, modern methods of contraception.

— adapted from *Emergency contraception: A cost-effective approach to preventing unintended pregnancy*<sup>2</sup>

For more information about emergency contraception, including the original publications from which this update was adapted, visit the following websites:

- International Consortium on Emergency Contraception: <http://www.cecinfo.org>
- International Planned Parenthood Federation: <http://www.ippf.org>
- The Emergency Contraception website: <http://ec.princeton.edu>

### Key points on copper-bearing IUDs<sup>1</sup>

- Copper-bearing IUDs are most appropriate for women who wish to retain the IUD as long-term contraception.
- When inserted within seven days after intercourse, IUDs are the most effective method of EC.
- IUDs reduce the risk of pregnancy by more than 99%.
- Patients should be screened for existing pregnancy, pelvic inflammatory disease (PID) and other reproductive-tract infections.
- Women who are at high risk for sexually transmitted infections may not be the best candidates to receive an IUD.

### EC knowledge and access issues to consider

Women's knowledge of EC varies throughout the United States, making discussion of EC at routine health visits an important way to increase knowledge.

1. Latinas, particularly foreign-born Latinas, are less likely to have heard about EC and to know how and when to use it.<sup>13, 14</sup>
2. Compared to other groups, low-income women, particularly women with incomes below the federal poverty level, have the least knowledge of EC.<sup>15</sup>

In 2006, a U.S. Food and Drug Administration (FDA) ruling made one type of EC, called Plan B, available over the counter for women aged 18 and older. Women across the country, however, still face significant barriers finding access to emergency contraception.

1. A government-issued ID is required to prove age, limiting access for immigrant women who lack documentation.
2. In several states, women must first get a prescription before Medicaid will pay for Plan B.<sup>16</sup>
3. Plan B availability is inconsistent at pharmacies nationwide. Surveys of pharmacies in Florida and North Carolina found that pharmacies in low-income areas and rural areas are less likely to carry EC.<sup>17, 18</sup>

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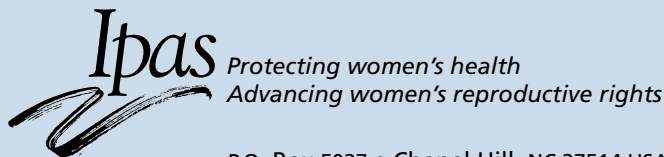
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2. What other reproductive health topics would you like to see covered in future clinical updates?
3. Do you have any other comments, suggestions or questions?

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