Emergency contraception

Dr. Raqibat Idris
raqibat.idris@gfmer.org

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Objectives of presentation

- Know what emergency contraception is.
- Know the methods of emergency contraception.
- Understand how the different methods of emergency contraception work.
- Know the effectiveness of emergency contraception.
- Know the indications and medical eligibility criteria for emergency contraception.
- Know the formulations and dosing of emergency contraceptive pills (ECPs).
- Know the side effects of ECPs and how to manage them.
- Know how to transition from emergency contraception to regular contraception.
- Know how to ensure human rights in the provision of emergency contraception.

Introduction

Worldwide, 1/3rd of women will experience violence in their lifetimes (ICEC, 2013).

About 7.2% of women will be sexually assaulted by a stranger and depending on the region, 23-36% of women will experience unwanted sex from an intimate partner (ICEC, 2013).

In addition to the physical and psychological trauma of rape and exposure to sexually transmitted infections and HIV/AIDS, victims of sexual violence are at risk of unwanted pregnancy (ICEC, 2013).

Globally, between 2010 and 2014, an estimated 44% of pregnancies were unintended. The unintended pregnancy rate in developed regions was 45 per 1000 women aged 15–44 years and in developing regions, 65 per 1000 women aged 15–44 years (Bearak, 2018).

In 2010-2014, an estimated 59% and 55% of unwanted pregnancies ended in abortion in developed and developing countries respectively (Bearak, 2018).

Emergency contraception can prevent pregnancy in women at risk of an unintended pregnancy (ICEC, 2013; WHO, 2018).

Bearak J, Popinchalk A, Alkema L, Sedgh G. Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: estimates from a Bayesian hierarchical model. The Lancet Global Health. 2018 Apr;6(4):e380-9.
International Consortium for Emergency Contraception (ICEC). Emergency contraception for rape survivors: A human rights and public health imperative. ICEC; 2013.
World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Definition

Emergency contraception are contraceptive methods that are used to prevent pregnancy after sexual intercourse.

They are recommended for use within 5 days but their effectiveness increases when used as early as possible after the act of intercourse.

Emergency contraception can prevent up to over 95% of pregnancies when taken within 5 days after intercourse.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Methods of emergency contraception

- Emergency contraceptive pills (ECPs)
  - Dedicated ECP Products
    - ECPs containing ulipristal acetate (UPA)
    - ECPs containing levonorgestrel (LNG)
  - Progestin-only pills with levonorgestrel or norgestrel
  - Combined oral contraceptive pills (COCs) with estrogen and a progestin- levonorgestrel, norgestrel, or norethindrone (also called norethisterone)

- Copper-bearing intrauterine devices

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Mechanism of action of emergency contraception

Emergency contraceptive pills (ECPs) stop pregnancy by preventing or delaying ovulation.

The copper-bearing intrauterine devices (IUDs) cause a chemical change in sperm and egg before they meet to prevent fertilization and thus, pregnancy.

Emergency contraception **DOES NOT** interrupt an established pregnancy and **DOES NOT** harm a developing embryo.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Eligibility criteria for emergency contraception

- Any woman or girl of reproductive age
- No absolute medical contraindications
- No age limits
- The eligibility criteria for general use of a copper IUD apply when they are used for emergency contraception.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Indications for emergency contraception

Emergency contraception can be used in the following situations following sexual intercourse:

- When no contraceptive has been used.
- Sexual assault when the woman was not protected by an effective contraceptive method.
- When there is concern of possible contraceptive failure, from improper or incorrect use.

A woman may be given advance supplies of ECPs to ensure their availability when needed and they can be used as soon as possible after unprotected intercourse.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Indications for emergency contraception

Improper or incorrect use of contraceptives include:

- Condom breakage, slippage, or incorrect use
- 3 or more consecutively missed combined oral contraceptive pills
- More than 3 hours late from the usual time of intake of the progestogen-only pill (minipill), or more than 27 hours after the previous pill
- More than 12 hours late from the usual time of intake of the desogestrel-containing pill (0.75 mg) or more than 36 hours after the previous pill
- More than 2 weeks late for the norethisterone enanthate (NET-EN) progestogen-only injection
- More than 4 weeks late for the depot-medroxyprogesterone acetate (DMPA) progestogen-only injection
- More than 7 days late for the combined injectable contraceptive (CIC)
- Dislodgment, breakage, tearing, or early removal of a diaphragm or cervical cap
- Failed withdrawal (e.g. ejaculation in the vagina or on external genitalia)
- Failure of a spermicide tablet or film to melt before intercourse
- Miscalculation of the abstinence period, or failure to abstain or use a barrier method on the fertile days of the cycle when using fertility awareness based methods
- Expulsion of an intrauterine contraceptive device (IUD) or hormonal contraceptive implant

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Emergency contraceptive pills (ECPs)

- Also called “morning after” pills or postcoital contraceptives.
- They are safe for use by all women including those who cannot use ongoing hormonal contraceptive methods (CCP and WHO, 2018).

Types of ECPs

- Dedicated ECP Products
  - ECPs containing ulipristal acetate (UPA)
  - ECPs containing levonorgestrel (LNG)
- Progestin-only pills with levonorgestrel or norgestrel
- Combined oral contraceptive pills (COCs) with estrogen and a progestin- levonorgestrel, norgestrel, or norethindrone (norethisterone). They are taken as a split dose. This regimen is known as the **Yuzpe method.**

(CCP and WHO, 2018; WHO, 2018).

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Emergency contraceptive pills (ECPs)

Mechanism of action

- They work by preventing or delaying the release of eggs from the ovaries (ovulation).
- Women who are already pregnant cannot benefit from ECPs.
- ECPs protect from pregnancy from sexual intercourse that took place in the preceding 5 days. They do not prevent pregnancy if the sexual intercourse happens more than 24 hours after taking ECPs.

Timing

- Anytime up to 5 days after an unprotected sex.
- To better prevent pregnancy, ECPs should be taken as soon as possible after unprotected sex.

Return of fertility

- No delay. Pregnancy can occur immediately after taking ECPs.

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ECP formulations and dosing

Pill Type and Hormone	Formulation	Pills to Take	
		At First	12 Hours Later
Dedicated ECP Products			
Progestin-only	1.5 mg LNG (levonorgestrel)	1	0
	0.75 mg LNG	2	0
Ulipristal acetate	30 mg ulipristal acetate	1	0
Oral Contraceptive Pills Used for Emergency Contraception			
Combined (estrogen-progestin) oral contraceptives	0.02 mg EE (ethinyl estradiol) + 0.1 mg LNG	5	5
	0.03 mg EE + 0.15 mg LNG	4	4
	0.03 mg EE + 0.125 mg LNG	4	4
	0.05 mg EE + 0.25 mg LNG	2	2
	0.03 mg EE + 0.3 mg norgestrel	4	4
	0.05 mg EE + 0.5 mg norgestrel	2	2
Progestin-only pills	0.03 mg LNG	50	0
	0.0375 mg LNG	40	0
	0.075 mg norgestrel	40	0

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Effectiveness of ECPs

- Without contraception, 8 out of 100 women have the likelihood of becoming pregnant if they have sex once during the second or third week of their menstrual cycle.
- The chances of pregnancy reduces to fewer than one woman if all 100 women used ulipristal acetate (UPA) ECPs.
- One woman out of 100 would likely become pregnant if they all used progestin-only ECPs.
- If all 100 women used combined estrogen and progestin ECPs, 2 of them may become pregnant. (CCP and WHO, 2018)
- UPA-ECPs are more effective than other ECPs between 72 to 120 hours after unprotected intercourse.
- ECPs are less effective in obese women (body mass index > 30 kg/m^2). However, these women should not be denied the use of emergency contraception when needed. (WHO, 2018)

For maximal effectiveness, ECPs should preferably be taken as early as possible after unprotected intercourse and within 120 hours (WHO, 2018).

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Medical eligibility criteria (MEC) for ECPs

All women are medically eligible to use ECPs. Women who cannot use hormonal contraceptives as regular methods can also use ECPs because they are used for a short term (CCP and WHO, 2018).

When taken frequently and repeatedly, ECPs may be harmful for women who have MEC category 2, 3 or 4 conditions for combined hormonal contraception or Progestin-only contraceptives (WHO, 2018).

Women who use ECPs as a main method of contraception or for any other reason should be counselled on the appropriateness, effectiveness and the correct usage of more regular contraceptive methods (WHO, 2018).

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Side effects of ECPs

Side effects of ECPs are uncommon, mild, and in general will resolve without further medications (WHO, 2018).

In the first several days there may be:

- Nausea
- Abdominal pain
- Fatigue
- Headaches
- Breast tenderness
- Dizziness
- Vomiting

ECPs with progestin-only or with UPA are much less likely to cause nausea and vomiting compared with ECPs containing estrogen and progestin (COCs) (CCP and WHO, 2018).

Other side effects are:

- Changes in bleeding patterns:
  - slight irregular vaginal bleeding for 1 to 2 days after taking ECPs
  - early or delayed monthly bleeding (CCP and WHO, 2018).

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Managing side effects of ECPs

Nausea

- Routine use of anti-nausea medications is not recommended.
- For nausea occurring with previous ECP use or with the first dose of a 2 dose regimen, anti-nausea medication like 25-50 mg meclizine hydrochloride (Agyrax, Anitvert, Bonine, Postafene) can be taken 30 minutes to one hour before using ECPs.

Vomiting

- If vomiting occurs within 2 hours of taking progestin-only or combined ECPs, the dose should be repeated.
- If vomiting occurs within 3 hours of taking ulipristal acetate ECPs, the dose should be repeated. Anti-nausea medication can be used with this repeat dose as described above.
- If vomiting continues, repeat dose of progestin-only or combined ECPs can be used by placing the pills high in the vagina.
- If vomiting occurs more than 2 hours after taking progestin-only or combined ECPs, or more than 3 hours after taking UPA-ECPs, there is no need to repeat the dose.

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Managing side effects of ECPs cont'd.

Irregular vaginal bleeding

- Reassure that it is not a sign of illness or pregnancy.
- It usually resolves without treatment.

Early or delayed monthly bleeding

- Reassure that it is not a sign of illness or pregnancy.
- Assess for pregnancy if the monthly bleeding is late by more than 7 days after the use of ECPs.
- Reassure that there are no known risks to the fetus if ECPs do not prevent pregnancy.

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Safety of ECPs

- ECPs can be used by women of all ages, including adolescents
- They are not dangerous to a woman's health
- They do not cause abortion
- They do not prevent or affect implantation
- They do not cause birth defects if pregnancy occurs
- They do not harm future fertility
- There is no delay in the return to fertility after taking ECPs
- There are no safety concerns for obese women
- ECPs do not increase risky sexual behaviour
- A woman can use ECPs more than once during her cycle
- There is no known health risks from repeated use of emergency contraception. However, side effects like menstrual irregularities may occur more when they are used frequently.

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World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Advantages of ECPs

- ECPs can be taken when needed. The woman does not need to visit a health care provider prior to taking ECPs.
- There is no need to do tests and examinations or procedures before taking ECPs. However, if the woman misses her last menses, she should have a pregnancy test before taking ECPs with UPA.
- Women have a second chance to prevent unwanted pregnancies.
- Pregnancies can be avoided in cases of unconsented sex or where the woman was not allowed to use contraception.
- Use is controlled by the woman.
- The need for abortion due to nonuse or failure of contraception is less.
- The woman can keep supplies of ECPs ready for use if the need arises.

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Transition from ECPs to regular contraception

Method	When to start or restart	
	Following progestin-only or combined ECPs	**Following ulipristal (UPA) ECPs**
Hormonal methods (combined oral contraceptives, progestin-only pills, progestin-only injectables, monthly injectables, implants, combined patch, combined vaginal ring)	• Can start or restart immediately. There is no need to wait for next monthly bleeding. • If she is a continuing user of oral contraceptive pills, she should resume use as before. It is not necessary to start a new pack. • Patch users should start with a new patch. • Ring users should follow the procedure for late replacement or removal of vaginal ring. • All women should abstain from sex or use a backup method (abstinence, male and female condoms, spermicides, and withdrawal) for the first 7 days of using the regular method. • If the woman does not start immediately but returns for a method later, she can start any method at any time after pregnancy has been ruled out.	• Start or restart any method containing progestin on the 6th day. There is no need to wait for the next monthly bleeding. • Earlier start for methods containing progestin is not recommended because both LNG and UPA interact. The presence of both drugs in the body may reduce their effectiveness. • If the woman wishes to use oral contraceptive pill, vaginal ring, or patch, give her a supply with instructions to start on the 6th day after using UPA-ECPs. • If she has chosen to use injectables or implants, give a follow-up appointment for the method on the 6th day of use of UPA-ECPs or as soon as possible after. • All women should use a backup method from the time they take UPA-ECPs until 7 days of starting a hormonal method (2 days for progestin-only pills). • If the woman returns later than the 6th day to start a method, she may start any method at any time after ruling our pregnancy.

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Transition from ECPs to regular contraception cont'd.

Method	When to start or restart	
	Following progestin-only or combined ECPs	**Following ulipristal (UPA) ECPs**
Levonorgestrel intrauterine device (LNG-IUD)	• LNG-IUD can be inserted at any time if it is confirmed that the woman is not pregnant. • Use backup methods for the first 7 days after LNG-IUD insertion.	• LNG-IUD can be inserted on the 6th day after ruling out pregnancy. • Give an appointment to have it inserted on the 6th day after taking UPA-ECPs or the earliest possible time thereafter. • Use backup methods from the time of using UPA-ECPs until 7 days after the insertion of LNG-IUD. • If the woman returns after the 6th day, LNG-IUD can be inserted at any time if it can be ascertained that she is not pregnant.
Copper-bearing intrauterine device	• Can be inserted on the same day after taking ECPs. No need for a backup method. • If the woman returns at a later date, she can have it inserted at any time if it can be established that she is not pregnant.	
Female sterilization	• The sterilization procedure can be done within 7 days after the start of her next monthly bleeding or any other time after ruling out pregnancy. • Supply backup method for her to use until the procedure can be done.	
Male and female condoms, spermicides, diaphragms, cervical caps, withdrawal	• Immediately	
Fertility awareness methods	• Standard Days Method: With the start of her next monthly bleeding. • Symptoms-based methods: Once normal secretions have returned. • Supply backup method to use until she can start the method of her choice.	

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Copper-bearing intrauterine devices (IUDs)

- Particularly beneficial to women who want to use a highly effective, long-acting and reversible contraceptive method (WHO, 2018).

Mechanism of action:

- Prevents pregnancy by altering the chemical nature of the sperm and egg to stop fertilization (WHO, 2018).

Timing:

- As an emergency contraceptive method, copper-bearing IUD should be inserted within 5 days of unprotected intercourse.

- If the time of ovulation can be estimated, the IUD can be inserted up to 5 days after ovulation. This may be more than 5 days after unprotected sex.

(CCP and WHO, 2018).

World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project. Family Planning: A Global Handbook for Providers (2018 update). Baltimore and Geneva: CCP and WHO; 2018.
World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Effectiveness of copper-bearing IUDs

Copper-bearing IUDs are the most effective form of emergency contraception available.

The effectiveness of copper-bearing IUDs in preventing pregnancy is > 99% when inserted within 5 days of unprotected intercourse.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Safety of copper-bearing IUDs

Copper-bearing IUD is a safe method of emergency contraception.

The occurrence of Pelvic Inflammatory Disease (PID) may be < 2 cases per 1000 users.

Risks of expulsion or perforation are low.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Medical eligibility criteria for copper-bearing IUDs

Eligibility criteria for the general use of a copper IUD apply to its use as an emergency contraceptive method.

IUD insertion may further increase the risk of PID among women at increased risk of sexually transmitted infections (STIs), though this risk may be low. The risk of STIs varies depending on the behaviour of the individual and prevalence of STI in the local setting. In general, women at increased risk of STI can use IUD.

Situations when a copper IUD should not be used as emergency contraception are listed in the next slide.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Medical eligibility criteria for copper-bearing IUDs cont'd.

Copper IUDs should not be used as emergency contraception in the following situations:

- In women with MEC category 3 or 4 conditions for copper IUD. This includes women with ongoing PID, puerperal sepsis, unexplained vaginal bleeding, cervical cancer, or severe thrombocytopenia.
- In women who are victims of sexual assault due to a high risk of STIs like chlamydia and gonorrhea.
- In women who are already pregnant.
- In women with very high risks of STIs. Appropriate testing and treatment should be done first before inserting IUD in this category of women.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Transition from copper-bearing IUDs to regular contraception

There is no need for additional contraceptive protection if a copper IUD is used for emergency contraception.

Copper-bearing IUD can be continued as an ongoing method of contraception or the woman may change to another contraceptive method of her choice.

World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Partner involvement in the provision of emergency contraception

- The partner can participate in counselling and learn about the method and how he can be of support.
- He can support his partner's choice and decision to use emergency contraception.
- He should be understanding and supportive of her need to choose and use a continuing method of contraception.
- He should help to ensure the availability of ECPs in case there is a need for her to take them again.
- He should use condom consistently in addition to IUDs if he has an STI/HIV or thinks he may be at risk of an STI/HIV.
- He should help her to remember when an IUD is due for removal.
- He should understand and support the correct use of an ongoing contraceptive method or discuss with her the use of another method to avoid mistakes and frequent need for emergency contraception.

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Emergency contraception and human right

All women and girls at risk of an unintended pregnancy have a right to access emergency contraception.

Emergency contraceptive methods should be routinely included within all national family planning programmes.

Emergency contraception should be integrated into health care services for populations most at risk of exposure to unprotected sex, including post-sexual assault care and services for women and girls living in emergency and humanitarian settings. (WHO, 2018)

Emergency contraception must be readily available in emergency care facilities as both a human rights and public health imperative (ICEC; 2013).

International Consortium for Emergency Contraception (ICEC). Emergency contraception for rape survivors: A human rights and public health imperative. ICEC; 2013.
World Health Organization. Emergency contraception: Key facts [Internet]. WHO; 2018 Feb 02 [cited 2018 Oct 27].

Further reading

- WHO Selected practice recommendations for contraceptive use
- Medical eligibility criteria for contraceptive use
- Ensuring human rights within contraceptive programmes: a human rights analysis of existing quantitative indicators

References

- Bearak J, Popinchalk A, Alkema L, Sedgh G. Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: estimates from a Bayesian hierarchical model. The Lancet Global Health. 2018 Apr;6(4):e380-9. http://dx.doi.org/10.1016/S2214-109X(18)30029-9
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