EMERGENCY CONTRACEPTION: A RATIONAL APPROACH

A request for the 'morning after pill' presents the GP with the challenge of making appropriate decisions based on a number of criteria. Louise Newson, a GP and specialist writer on women's health, explores the issues and the options faced when prescribing emergency contraception

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CLINICAL CASE STUDY

Lisa is a 17 year old girl who comes to see you one Monday morning asking for emergency contraception. She had unprotected sex on Saturday night. She tried the oral contraceptive pill in the past but found that she kept forgetting to take it. However, she has been recently diagnosed as having epilepsy, for which she takes carbamazepine, and has been told by her friends that she cannot take emergency contraception as it interferes with her anti-epilepsy medication. She comes to see you for advice. How should you advise her?

Emergency contraception (EC) – also referred to as postcoital contraception and the 'morning after pill' – is defined as the use of contraception to prevent a pregnancy following intercourse.

There are currently three different methods that can be used in the UK:

- **Copper intrauterine contraceptive device (IUD)**
- **Levonorgestrel**
- **Ulipristal acetate**

These are summarised in Table 1.

Indications for use of EC

The most common and obvious indication for EC is following intercourse when no contraception has been used and a pregnancy is not planned. It should be also given following rape or sexual assault.

Other indications for EC use include:

- **Incorrect use of barrier methods**
- **Use of hormonal contraception when taking an enzyme-inducing drug (eg rifampicin) or in the 28 days after use**
- **Missing two or more combined oral contraceptive pills in the first week (see Figure 1)**
- **Not using barrier contraception within seven days of vomiting or diarrhoea when taking oral contraception**
- **Missing one or more progesterone-only pills or if it has been more than 36 hours since the last desogestrel-only pill**
- **If more than 14 weeks have elapsed since the last depot contraceptive injection**
- **If a change of contraceptive patch has been delayed by more than 48 hours**

TABLE 1. METHODS OF EMERGENCY CONTRACEPTION IN THE UK[1]

Method	Class	Products	Recommended dose/use	Indications
Copper-bearing intrauterine device (Cu-IUD)	Intrauterine contraceptive method	Various types licensed for contraception	IUD retained until pregnancy excluded (e.g. onset of period) or for licensed duration of IUD (5–10 years)	Within the first 5 days (120 hours) following first UPSI in a cycle or within 5 days from the earliest estimated date of ovulation
Levonorgestrel (LNG)	Progestogen hormone	Levonelle One Step® (P) Levonelle 1500® (POM)	1.5 mg single oral dose	Licensed for use within 72 hours of UPSI or contraceptive failure
Ulipristal acetate (UPA)	Progesterone receptor modulator	ellaOne® (POM)	30 mg single oral dose	Licensed for use within 120 hours of UPSI or contraceptive failure

EC, emergency contraception; P, pharmacy medicine; POM, prescription-only medicine; UPSI, unprotected sexual intercourse.
Source: Faculty of Sexual and Reproductive Healthcare of the Royal College of Obstetricians and Gynaecologists

- **If a contraceptive IUD has been removed without replacing another, if it has been expulsed or if the threads are missing**

Note: If more than two pills have been missed during the last seven days of a packet of combined oral contraceptive (COC) pills then the next packet should be started without a pill-free week. EC is not needed for the first 21 days post partum.

Key considerations for the consultation

Various factors may need to be taken into consideration to determine whether EC is actually indicated and also the type of EC that is most suitable for each individual woman.

The following should be noted:

- **Menstrual history of patient**
- **Length of time since unprotected sexual intercourse (UPSI)**
- **Whether there have been any other episodes of UPSI in this cycle**
- **Type of contraception used, if any**
- **Previous use of any EC**
- **Medication history (including any OTC medications, e.g. St John's wort)**
- **Any past relevant gynaecological history (e.g. pelvic inflammatory disease)**
- **Current need for contraception**

Determining the precise timing of an ovulation in a woman is very difficult. The length of the luteal phase (ovulation to menstruation) is usually constant at 14 days, whereas the follicular phase is more variable. Conception is most likely to occur following UPSI on the day of ovulation or in the preceding 24 hours. The risk of pregnancy cannot be accurately determined from a self-reported cycle. Although the chances of pregnancy from a single act of intercourse in the first 3 days of the cycle is actually negligible, many healthcare professionals will still recommend EC if UPSI has occurred at this time.

Types of EC

Copper-bearing intrauterine device (Cu-IUD)

Copper is toxic to the ovum and sperm. The Cu-IUD works primarily by inhibiting fertilisation.

A Cu-IUD should be fitted within the first 5 days (120 hours) following first UPSI in a cycle or within 5 days of the earliest estimated date of ovulation.[3] The copper IUD is the most effective EC method and the only method to provide ongoing contraception if left *in situ*. Ideally an emergency IUD should be inserted at first presentation, but where this is not possible oral EC can be given in the interim and then the woman advised to attend for insertion at the earliest appropriate time.

The failure rate for use of the Cu-IUD used as emergency contraception is considerably lower than 1%. One large prospective observational cohort study has shown that the CU-T380A® IUD is very effective with no pregnancies reported in the first month after insertion among 1963 women (nulliparous and parous) who received it for the purpose of EC.[4]

The Cu-IUD may be removed following the next menstrual period if it is not required as long-term contraception.

There is no evidence of effectiveness for using the levonorgestrel-releasing intrauterine system (LNG-IUS) as emergency contraception and so it should not be offered for this purpose.

Levonorgestrel (LNG)

LNG is taken as a single oral 1.5mg dose as soon possible after UPSI and is licensed for use for up to 72 hours following UPSI. Although the precise mode of action of levonorgestrel (LNG) is not fully understood, it appears to inhibit ovulation by preventing follicular rupture or causing luteal dysfunction.[5] LNG can inhibit ovulation for 5–7 days, by which time any sperm in the reproductive tract will have become non-viable.[6]

Pregnancy rates with LNG are around 2-3% when used within 72 hours of UPSI. LNG is more effective if taken closer to the episode of UPSI.[7]

LNG can be taken more than once in a cycle if indicated. If women are taking liver enzyme-inducing drugs and do not want or cannot have a Cu-IUD then they can be given a double dose of 3mg LNG (although this is outside the product licence).

The available evidence suggests that pregnancies occurring after LNG failure are not associated with any major congenital malformations, pregnancy complications or other adverse pregnancy outcomes.[8]

Ulipristal acetate (UPA)

UPA is taken as a single oral 30mg dose as soon as possible after UPSI and is licensed for emergency contraception up to 120 hours (5 days) following UPSI.

Ulipristal's primary mechanism of action is thought to be inhibition or delay of ovulation. The efficacy of UPA has been demonstrated up to 120 hours after UPSI and there is no apparent decline in efficacy within that time period.[9]

Pregnancy rates with ulipristal are around 1-2% when taken within 120 hours.[10] The use of ulipristal has increased recently; one study has demonstrated that the use of this EC has increased to nearly 19%.[11]

Although there is currently a lack of evidence on the effect of UPA if inadvertently administered after implantation has occurred, there have been no associated adverse outcomes in the small numbers of inadvertent pregnancies that have been reported to date.[12]

UPA should not be given more than once in the same menstrual cycle. Women taking liver enzyme-inducing drugs and also those taking dugs that increase the gastric pH (e.g. antacids, proton pump inhibitors) should not be offered UPA.

The risk of pregnancy with UPA has been shown to be significantly reduced compared with LNG.[10]

Common side effects

The most common side effect following IUD insertion is pain.

Headache, nausea and altered bleeding patterns are common after taking both types of hormonal emergency contraception. Although vomiting is uncommon, all women should be advised to take another dose of EC if they vomit within 2 hours of taking LNG or within 3 hours of taking UPA.

Additional management

Current guidelines recommend that all women receiving EC should be offered testing for sexually transmitted infections (STIs) irrespective of age, relationship or ethnicity.[1] HIV testing may also be appropriate for some women. Women should be made aware that any recently acquired infections may not be detected initially and so they may need to be retested after the appropriate window period. This depends on the infection; for example HIV testing may need to be repeated after 3 months.

All women should be advised to perform a pregnancy test after at least 3 weeks if they feel pregnant or have not had a normal period following using EC.

It is very important that all women are advised that the oral methods of emergency contraception are not a form of ongoing contraception.

Starting contraception

Although women often prefer to wait until a pregnancy is excluded before starting contraception, it may be appropriate in some cases to start contraception immediately (quick starting contraception). Some women prefer to start effective contraception promptly and it may be offered to those who are likely to have UPSI again in the same cycle. A method that has been quick started may be continued as an ongoing method of contraception or it may be used as a temporary 'bridging' method until pregnancy can be excluded and a longer-acting method initiated.

This is usually in the form of the combined hormonal contraceptive (CHC), the progesterone only pill (POP) or the implant. The progesterone-only injectable should only be quick started after EC if other methods are not appropriate or not acceptable.

FIGURE 1: MISSED COMBINED ORAL CONTRACEPTIVE PILLS (COCS): CEU ADVICE FOR HEALTH PROFESSIONALS[2]

If one pill has been missed (more than 24 hours up to 48 hours late)

Continuing contraceptive cover

- The missed pill should be taken as soon as it is remembered.
- The remaining pills should be continued at the usual time.

Minimising the risk of pregnancy

EC is not usually required but may need to be considered if pills have been missed earlier in the packet or in the last week of the previous packet.

If two or more pills have been missed (more than 48 hours late)

Continuing contraceptive cover

- The most recent missed pill should be taken as soon as possible.
- The remaining pills should be continued at the usual time.
- Condoms should be used or sex avoided until seven consecutive active pills have been taken. This advice may be overcautious in the second and third weeks, but the advice is a backup in the event that further pills are missed.

Minimising the risk of pregnancy		
If pills are missed in the first week (Pills 1–7)	If pills are missed in the second week (Pills 8–14)	If pills are missed in the third week (Pills 15–21)
EC should be considered if unprotected sex occurred in the pill-free interval or in the first week of pill-taking.	No indication for EC if the pills in the preceding 7 days have been taken consistently and correctly (assuming the pills thereafter are taken correctly and additional contraceptive precautions are used).	OMIT THE PILL-FREE INTERVAL by finishing the pills in the current pack (or discarding any placebo tablets) and starting a new pack the next day.

Source: Faculty of Sexual and Reproductive Healthcare of the Royal College of Obstetricians and Gynaecologists

Continuing with contraception

If EC has been given because of missed pills, then women should restart their usual contraception as soon as possible. They will need to use additional precautions, such as condoms, for a period of up to 16 days, depending on the method of EC and ongoing contraception used, as shown below:

- **Following LNG: 7 days with CHC (9 for Qlaira); 2 days with POP**
- **Following UPA: 4 days with CHC (16 for Qlaira); 9 days with POP**

If a Cu-IUD is to be used for ongoing contraception, women should return for a follow-up visit following their first period (or 3–6 weeks) after insertion.

Advance prescriptions of EC

Although women may sometimes request an advance prescription of EC, this has not actually been shown to reduce pregnancy rates. It may, however, be appropriate for some women – for example those going on holiday or those solely relying on barrier methods of contraception. Many adolescents rely on condoms backed up by emergency contraception as their main method of contraception.[13] Currently LNG is the only EC that is available free under Patient Group Directions at pharmacies and clinics to women under 24 years. It can also be bought over the counter.

LISA'S MANAGEMENT

Although Lisa's friends are correct in that she should not be given ulipristal, the options for EC for her are either having the Cu-IUD inserted or taking double dose of levonorgestrel. The pros and cons of each choice should be discussed with her. Women who require EC while using liver enzyme-inducing anti-epileptic drugs should be advised that an IUD is the preferred option.

This consultation should also be used as an opportunity to discuss future contraception with her. The most suitable contraception available to her is the progestogen-only injection. Although she could consider having either the levonorgestrel-releasing intrauterine system (Mirena coil) or a copper-bearing intrauterine device inserted, these are not usually first choice methods for women of her age. Although no specific interaction studies have been performed with the etonogestrel-only implant, true failures have been reported in women also taking anti-epileptic drugs. The implant is not therefore recommended to women who are also taking carbamazepine. She should also be offered testing for any sexually transmitted infections. Whichever contraception she decides upon, she should also be advised to use condoms.

References

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KEY POINTS

1. There are several indications for emergency contraception (EC), apart from unprotected sexual intercourse (UPSI), including situations where regular contraception is overlooked or compromised
2. Three methods of EC are available in the UK: the Copper intrauterine contraceptive device (IUD), levonorgestrel (LNG) and ulipristal acetate (UPA)
3. A full relevant history is essential for ensuring rational prescribing
4. The copper IUD is the most effective EC method, with a failure rate well under 1%, and provides ongoing contraception if left in place
5. LNG is associated with pregnancy rates of around 2-3% when used within 72 hours of UPSI. Its effectiveness is greater the sooner it is taken after unprotected sex
6. UPA has increased in popularity. Pregnancy rates with UPA are around 1-2% when taken within 120 hours of UPSI
7. The most common side effects with hormonal EC are headache, nausea and altered bleeding patterns
8. GPs should ensure their patients receiving oral EC understand that it will not provide ongoing contraception
9. Anti-epileptic drugs that induce liver enzymes may reduce the efficacy of progestogen-only implants