CONTINUING MEDICAL EDUCATION

Emergency Contraception Pill - Controversies and Use

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SUMMARY
Emergency contraceptive pills (ECP) are effective, safe and cheap, with profound global health and economic benefits. Patient education and easy access to ECP will contribute immensely to avoiding unwanted pregnancies and unsafe abortions. Issues related to morality, its perceived status as an abortifacient and harmful behaviour should it be easily available, has limited the widespread use of ECP in many countries.

KEY WORDS:
Emergency contraception, Abortifacient, Unwanted pregnancy, Unsafe abortion

INTRODUCTION
Emergency contraceptive pill (ECP) is defined as the use of hormonal drugs within a few days of unprotected intercourse to prevent pregnancy1. Fifty five thousand unsafe abortions take place around the world everyday, leading to more than 200 maternal deaths daily2. The widespread use of emergency contraception could prevent one million abortions and two million unintended pregnancies that end in childbirth per year3. Despite its huge health and economic benefits, it does not enjoy total global endorsement and is embroiled in controversies in many countries. Controversies related to ECP acting as an abortifacient, and the perceived disadvantages that may arise should it be available over the counter as a non-prescription drug, limits its widespread use. Although these arguments appeal to the moral values of the conservative sector, they are at variance with the practical needs of a pluralistic society.

Ongoing litigation regarding its manufacture and sale in Latin America has further enhanced its false reputation as an abortifacient4. Historically, a single dose of estrogen administered after coitus was shown to prevent implantation and the need for prescription limit its access5. Vulnerable teens, rape victims, underprivileged women and the need for prescription limit its access6. WHO concluded that there is no absolute contraindication with levonogestrel (LNG) only regimen7. Inadvertent use during pregnancy is neither harmful to mother or fetus8. However, patients with severe cardiovascular complications, migraine and severe liver disease require careful follow-up and advised on LNG-only regimes.

Since the safety profile has been validated, ECP proponents advocate its availability as a non-prescription, over the counter drug, as the most sensible and practical way of ensuring easy accessibility. Unnecessary pelvic examination, urine pregnancy test, consent form, consultation with doctor and the need for prescription limit its access9. Vulnerable adolescents who engage in sexual activities prior to commencing contraceptive use are particularly suitable for ECP. Opponents argue that this encourages promiscuity and pregnancy among teenagers, undermines the use of conventional contraceptives, often quoted in textbooks. Emergency contraception with levonogestrel and mifepristone mainly inhibit or delay ovulation. Whether luteinizing hormone surge is blocked or other processes involved in ovulation are affected remain unclear10. Five other original papers show that ECP interferes with the ovulatory process11, 12. Whether ECP in humans2, 6, 7, 8, 8 ,. Almost all made references to the original observation in rodents to explain the mechanism of action. This coupled with poorly updated knowledge of providers, misreporting in the mass-media, ethical constraints of demonstrating interference of post-fertilization treatment has convinced many to believe that pituitary hormone secretion is inhibited.

Clinical Aspects of ECP
The Yuzpe regime consists of two doses of 100 micrograms of ethinylestradiol and 500 micrograms of levonogestrel each, to
Emergency Contraception Pill - Controversies and Use

Table I: Indications for ECP

| 1. Unprotected vaginal intercourse (willing, coerced, raped) |
| 2. Breakage, slippage or incorrect use of condom, |
| 3. Three or more consecutive missed combined oral contraceptive |
| 4. More than 3 hours delay for progestogen-only pill |
| 5. More than 2 weeks delay for progestogen contraceptive injection |
| 6. Failed coitus interrupts |
| 7. Dislodgement, breakage, tearing or early removal of a diaphragm or cervical cap |
| 8. Miscalculation of periodic abstinence method |
| 9. Expulsion of intrauterine contraceptive devise |

- Adapted from Croxatto et al

Table II: ECP dosage

<table>
<thead>
<tr>
<th>Emergency Contraception Pill</th>
<th>Recommended Dosage</th>
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<tbody>
<tr>
<td>1. Levonogestrel</td>
<td>a) 1.5mg single dose</td>
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<tr>
<td>2. Yuzpe regime</td>
<td>b) 0.75mg each dose (2 doses, 12 hours apart)</td>
</tr>
<tr>
<td>3. Mifepristone</td>
<td>100ug ethinylestradiol and 500ug levonogestrel each dose (2 doses, 12 hours apart)</td>
</tr>
<tr>
<td></td>
<td>10mg single dose</td>
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be taken 12 hours apart. It is one of the earlier and better known regimes. This along with levonogestrel alone regime and mifepristone remain the most well researched of ECPs. A large comparative trial by WHO found a 1.1% pregnancy rate for the conventional levonogestrel alone regime (two doses of 0.75 milligrams of LNG, at 12 hours interval), compared to 3.2% pregnancy rate for the Yuzpe regime, when administered within 72 hours after an unprotected sexual intercourse27. A much larger, more recent trial by WHO compared the conventional two dose LNG regime (two doses of 0.75 milligrams LNG, 12 hours apart) with a single dose of 1.5 milligrams of LNG28. The results demonstrated the high effectiveness of both regimes, but concluded that the single dose regime holds a slight advantage, albeit not significant (1.3% compared to 1.7% respectively when administered within 72 hours after unprotected coitus). Treatment efficacy declines, when the time interval between the act of coitus and ECP administration is prolonged. WHO estimates a 50% increase in the risk of pregnancy for every 12 hours delay in taking the first pill29.

The most important adverse effect of ECP is vomiting and if it happens within the first two hours of taking the first pill, repeat dosing is required to maintain effectiveness of ECP. LNG alone regime has less incidence of vomiting (5.6%) compared to the Yuzpe regime (18.8%)27. Other less frequently reported side effects include headache, dizziness, fatigue and breast tenderness. A single oral dose of 1.5mg of levonogestrel alone remains the best option for ECP, in terms of effectiveness, ease of administration, safety and adverse effects30,31. ECP can be used independent of the day of cycle in which the coital act took place. Traditionally ECP was recommended up to 72 hours after unprotected sexual intercourse, but the time line can be extended up to 120 hours (five days) in light of recent findings by Hertzen et al 32, which showed an acceptable pregnancy rate of 2.4% (for the two dose LNG regime ) and 2.7% ( for single dose LNG regime). But users need to be counseled on the slightly higher failure rate.

ECP does not offer further protection against another unprotected sexual encounter occurring in the same cycle32. Repeat dosing is advised in such instances but users must be counseled against such practice as it would cause menstrual irregularities and worsening side-effects compared to usual contraceptive pill. Furthermore conventional contraceptive method offers better protection against pregnancy. Anti- emetics before the second dose are advised in the event of vomiting after the first dose. The subsequent menstruation following an ECP usage may be delayed or comes earlier by a few days33. Pregnancy needs to be excluded when there is a delay of more than seven days. It should also be stressed that ECP does not protect against sexually transmitted diseases.

Another effective ECP is mifepristone, a synthetic steroid with potent anti-progestational and anti-glucocorticoid properties. A single dose of 600 milligrams of mifepristone within 72 hours of unprotected coitus is slightly more effective (1.3% pregnancy rate) compared to the Yuzpe regime, with added advantage of significantly less adverse effects compared to all the other regimes34. A much lower dose of 10 milligrams of mifepristone was also found to be equally effective (1.2% pregnancy rate), even at a longer post-coital treatment of 120 hours35. It is popular in China, though its high cost is a limiting factor.

CONCLUSION

Conservative societal values and ethics often create barriers to easy access and availability of ECP, which transgresses principles of patient autonomy and beneficence. Scarcity of local data on the subject precludes any definitive conclusions; perceived breach of morality when addressing sexual health, shared by some segments of society further compounds any tangible progress. The status quo remains, in many communities few understand the many advantages of ECP. A positive outlook by policy makers, improvement of provider’s knowledge and overcoming moral barriers are strategies to be adopted for more widespread use of ECP among vulnerable individuals.

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Continuing Medical Education

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Emergency Contraception Pill - Controversies and Use

MCQ

1. Regarding the use of emergency contraceptive pills
   A. Inadvertent use during early pregnancy causes CNS malformations of fetus
   B. There is no increased risk of thromboembolism
   C. Contraindicated in liver disease
   D. Very common among teenagers
   E. Encourages high risk sexual behaviour

2. Emergency contraceptive pills after unprotected sexual intercourse
   A. Is indicated if more than 3 COC are missed consecutively
   B. Cannot be used if more than 72 hours after coitus
   C. Is indicated if progestogen contraceptive injection is delayed by one week
   D. Can only be used in luteal phase of menstrual cycle
   E. Cannot be used in miscalculation of periodic abstinence method

3. Regarding the Yuzpe regime
   A. It consists of 2 doses of 500ug of ethinylestradiol and 100ug of levonogestrel
   B. Has more side effects compared to levonogestrel alone regime
   C. Conventional combined oral contraceptives can be used
   D. Has a pregnancy rate of 1.1%
   E. Vomiting within 2 hours of first dose requires repeat dosing

4. Emergency contraception pill using levonogestrel
   A. Is more effective when given as a single 0.75mg dosage
   B. Has lower side effects than regular COC when used repeatedly
   C. Is still effective 5 days after unprotected coitus
   D. Breast tenderness is a common complaint
   E. Is an abortifacient

5. Emergency contraceptive pill in the global perspective
   A. Is more readily available in developing countries
   B. Most European countries require doctor's prescription before dispensing
   C. Is an expensive drug to manufacture
   D. Mifepristone is popular in China
   E. Majority of providers are well versed with ECP