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[Intervention Review]

Interventions for emergency contraception

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Editorial group: Cochrane Fertility Regulation Group.

Publication status and date: Edited (conclusions changed), published in Issue 8, 2012.

Review content assessed as up-to-date: 18 July 2011.

Citation: Cheng L, Che Y, Gülmezoglu AM. Interventions for emergency contraception. *Cochrane Database of Systematic Reviews* 2012, Issue 8. Art. No.: CD001324. DOI: 10.1002/14651858.CD001324.pub4.

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ABSTRACT

Background

Emergency contraception (EC) is using a drug or copper intrauterine device (Cu-IUD) to prevent pregnancy shortly after unprotected intercourse. Several interventions are available for EC. Information on the comparative effectiveness, safety and convenience of these methods is crucial for reproductive healthcare providers and the women they serve.

Objectives

To determine which EC method following unprotected intercourse is the most effective, safe and convenient to prevent pregnancy.

Search methods

The search included the Cochrane Controlled Trials Register, Popline, MEDLINE, PubMed, Biosis/EMBASE, Chinese biomedical databases and UNDP/UNFPA/WHO/World Bank Special Programme on Human Reproduction (HRP) emergency contraception database (July 2011). Content experts and pharmaceutical companies were contacted.

Selection criteria

Randomised controlled trials and controlled clinical trials including women attending services for EC following a single act of unprotected intercourse were eligible.

Data collection and analysis

Data on outcomes and trial characteristics were extracted in duplicate and independently by two review authors. Quality assessment was also done by two review authors independently. Meta-analysis results are expressed as risk ratio (RR) using a fixed-effect model with 95% confidence interval (CI). In the presence of statistically significant heterogeneity a random-effects model was applied.

Main results

One hundred trials with 55,666 women were included. Most trials were conducted in China (86/100). Meta-analysis indicated that mid-dose mifepristone (25-50 mg) (20 trials; RR 0.64; 95% CI 0.45 to 0.92) or low-dose mifepristone (< 25 mg) (11 trials; RR 0.70; 95% CI 0.50 to 0.97) were significantly more effective than levonorgestrel (LNG), but the significance was marginal when only high-quality studies were included (4 trials; RR 0.70; 95% CI 0.49 to 1.01). Low-dose mifepristone was less effective than mid-dose mifepristone (25 trials; RR 0.73; 95% CI 0.55 to 0.97). This difference was not statistically significant when only high-quality trials

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were considered (6 trials; RR 0.75; 95% CI 0.50 to 1.10). Ulipristal acetate (UPA) appeared more effective (2 trials; RR 0.63) than LNG at a marginal level ($P = 0.09$) within 72 hours of intercourse.

Regarding effectiveness in relation to the time of administration, women who took LNG within 72 hours of intercourse were significantly less likely to be pregnant than those who took it after 72 hours (4 trials; RR 0.51; 95% CI 0.31 to 0.84). It was not evident that the coitus-treatment time affected the effectiveness of mifepristone and UPA.

Single-dose LNG (1.5 mg) showed similar effectiveness as the standard two-dose regimen (0.75 mg 12 h apart) (3 trials; RR 0.84; 95% CI 0.53 to 1.33). This conclusion was not modified by the time elapsed from intercourse to treatment administration.

Mifepristone (all doses) (3 trials; RR 0.14; 95% CI 0.05 to 0.41) and LNG (5 trials; RR 0.54; 95% CI 0.36 to 0.80) were more effective than the Yuzpe regimen in preventing pregnancy. One trial compared gestrinone with mifepristone. No significant difference of effectiveness was identified in this trial (996 women; RR 0.75; 95% CI 0.32 to 1.76).

All methods of EC were safe. Nausea and vomiting occurred with oestrogen-containing EC methods and progestogen and anti-progestogen methods caused changes in subsequent menses. LNG users were more likely to have a menstrual return before the expected date, but UPA users were more likely to have a menstrual return after the expected date. Menstrual delay was the main adverse effect of mifepristone and seemed to be dose-related.

Authors' conclusions

Intermediate-dose mifepristone (25-50 mg) was superior to LNG and Yuzpe regimens. Mifepristone low dose (< 25 mg) may be more effective than LNG (0.75 mg two doses), but this was not conclusive. UPA may be more effective than LNG. LNG proved to be more effective than the Yuzpe regimen. The copper IUD was the most effective EC method and was the only EC method to provide ongoing contraception if left in situ.

PLAIN LANGUAGE SUMMARY

Methods of emergency contraception

Emergency contraception is using a drug or copper intrauterine device (Cu-IUD) to prevent pregnancy after unprotected sex. This is a back-up and not a regular contraceptive method. Mifepristone, ulipristal acetate and levonorgestrel are very effective with few adverse effects, and are preferred to an oestrogen and progestogen combined regimen. Levonorgestrel could be used in a single dose (1.5 mg) instead of two split doses (0.75 mg) 12 hours apart. The copper IUD is the most effective emergency contraceptive method and is the only emergency contraceptive method to provide ongoing contraception if left in situ.