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JOURNAL REVIEW

Effectiveness of levonorgestrel emergency contraception given before or after ovulation – a pilot study. Novikova N, Weisberg, E, Stanczyk FZ, Croxatto HB, Fraser IS. *Contraception* 2007; **75**: 112–118

Research on emergency contraception (EC) is bedevilled by ethical objections to conducting placebo-controlled trials, problems of indirect estimates of efficacy and the difficulty that EC pill trials include only single exposure to unprotected sex whereas in real life this is often not the case. We are urged to offer the option of a copper intrauterine device (IUD, which is known to have extremely high efficacy – considerably greater than levonorgestrel (LNG) EC – but which may not be immediately available, nor be as acceptable to clients as a pill. Although there is still some uncertainty about the efficacy of LNG EC, studies show it is definitely much better than doing nothing and this applies when even women present between 72 and 120 hours after the event.

Research on mode of action has shown the only convincing mechanism to be delaying or arresting follicular development and blocking or delaying/blunting the luteinising hormone (LH) surge; clearly this will not work if ovulation has already happened. Effects at the endometrial level that might prevent implantation have been shown in some studies for the Yuzpe regimen (PC4) but not for LNG.

Analysis of Yuzpe regimen studies has shown that EC is more effective when given earlier in the follicular phase. Until recently there were no data on effectiveness of LNG EC according to day of the cycle.

This small Australian pilot study seeks to remedy this situation. Ninety-nine women had their serum progesterone, estradiol and LH measured at the time of pill ingestion. EC was given at up to 120 hours after unprotected sex. Women were followed up 4–6 weeks later by telephone and any pregnancies were confirmed by ultrasound. Endocrine data showed that 41 were in the follicular phase, 30 were peri-ovulatory and 28 were in the luteal phase. Fifty-one women had had sex in a 5-day window prior to ovulation. There were three pregnancies, all of which occurred in the 17 women who had had sex in the peri-ovulatory period and were treated after ovulation; three or four pregnancies would have been expected. No pregnancies occurred in the 34 women who took EC before or around the time of ovulation; four or five pregnancies would have been expected.

The study also reports, as have other studies, major discrepancies between women's self-report of stage of the cycle and the dating calculation based on endocrine parameters. This reinforces the principle that EC should virtually never be withheld because of low risk calculated from the history.

If these results can be confirmed in adequately powered studies, then this will be further evidence that LNG EC does not work by preventing implantation (i.e. it does not have the capacity to intervene after fertilisation). This would call into question the use of LNG EC in the second half of the cycle. Greater pressure would be put on services to be able to offer women an emergency IUD if they are in the following groups:

- Cycle dates uncertain
- 48 hours after unprotected sex
- Thought to be in second half of the cycle at the time of unprotected sex
- Multiple exposure.

Reviewed by **Sam Rowlands**, MD, FRCGP
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Therapeutic options in the polycystic ovary syndrome. Bhathena RK. *J Obstet Gynaecol* 2007; **27**: 123–129

The polycystic ovary syndrome (PCOS) is the most common endocrine disorder affecting women. Many of the patients we encounter in everyday women's health care practice will therefore have manifestations of this condition and will need objective and up-to-date advice. The topics discussed in Mr Bhathena's recent review include the recently agreed definition of PCOS, its clinical features and the therapeutic options available for the management of its presenting problems such as hirsutism and other androgenic effects, menstrual disturbance, obesity and anovulatory infertility.

Mr Bhathena draws attention to the fact that women with PCOS, particularly those who are obese, need long-term advice and support in order to reduce the risks of hypertension, lipid disorders, impaired glucose tolerance and cardiovascular disease in later life, all of which are associated with the fundamental problem of insulin resistance that is probably the main causative factor of the syndrome. The author deals with various approaches to achieving weight reduction, including the potential for the use of metformin, but I was disappointed that there was no assessment of the current fashion of advising low glycaemic index (low GI) diets, for which evidence of efficacy and safety has yet to be confirmed.

The review is helpful in mentioning some of the benefits of hormonal contraception for women with PCOS. Those with hirsutism or acne will be helped by oestrogenic low-dose combined oral contraceptives (COC) containing desogestrel (Marvelon® or Mercilon®) or drosperinone (Yasmin®), although initial treatment with a contraceptive dermatological preparation containing cyproterone acetate (Dianette®, Clairette®) is conventional. Women with menstrual disturbance will be helped either by a COC or by the levonorgestrel IUS (Mirena®), which may also be of value in reducing the long-term risk of endometrial carcinoma due to the unopposed action of oestradiol.

This concise yet comprehensive review provides a very helpful introduction to the many issues involved in the management of this common but complex condition.

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Does methotrexate confer a significant advantage over misoprostol alone for early medical abortion? A retrospective analysis of 8678 abortions. Aldrich T, Winikoff B. *Br J Obstet Gynaecol* 2007; **114**: 555–562

This was a retrospective review of 8678 cases of women who had medical abortion (<8 weeks) with either a regimen of (a) misoprostol alone or (b) a combination of methotrexate and misoprostol (different routes of administration). Initial treatment doses were given in the clinics, but subsequent misoprostol (self-administered) and abortion occurred at home. Patients attended the clinics 2 weeks later. The study was conducted in a Latin American country where abortion is highly restrictive/illegal so the clinics were anonymised (for security reasons). The aim was to compare the efficacy of the combined methotrexate and misoprostol only regimens. Abortion rates were significantly better with the combined regimens than misoprostol alone (83% vs 77%, respectively). It is possible that this reflects the two modes of action: misoprostol on uterine activity and the antimitotic effect of methotrexate upon conceptus. The authors concluded that the use of methotrexate was important in maximising success in countries where abortion is highly restrictive and mifepristone is unavailable. Methotrexate has adverse effects on bowel, liver and hair (loss). In contrast, mifepristone is well tolerated, allows reduced doses of misoprostol (fewer side effects) with a complete abortion rate of 97%. Unfortunately, women in these countries needlessly suffer greater morbidity and complications because they continue to be denied this safer more effective treatment.

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