Reviewer's report

Title: A systematic review of effectiveness and safety of different regimens of levonorgestrel oral tablets for emergency contraception

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Reviewer: Norman Goldstuck

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1) During the introduction the authors state that one of the outcomes they will assess is "the proportion of pregnancies prevented". This is then equated with the number of women in the studies who do not become pregnant which is something altogether different which fatally flaws the study.

2) They fail to separate pharmacological studies (which they report very well) with clinical studies & this leads to examples like Table 1 which makes no sense. In this Table which is difficult to follow because reference numbers are not given to studies we learn that there was a double blind study by Croxatto et al. This was a pharmacological study. There has never been a double blind study to evaluate emergency contraception efficacy. This is why it has taken so long to determine how effective it might be.

The study by Tremblay et al was in France not South Africa.

3) In Table 2 we are told that there is a 99% pregnancy prevention by 1.5mg levonorgestrel. This is not true. Many of the women who do not become pregnant would not have become pregnant anyway for various reasons.

4) Although not part of the systematic review no paper on emergency contraception is complete without reference to the work of James Trussell who has shown by reference to day of cycle of unprotected sex that levonorgestrel 1.5mg is 50% effective at best.

5) There is no mention of the effect of weight on the efficacy of levonorgestrel. This is very topical as increased BMI rapidly reduces the effect of levonorgestrel.

6) This is a topic in desperate need of a good systematic review but this misses the mark.

7) The paper needs to be redone with a clinician with a well defined protocol which should be deposited in PROSPERO before redoing the study.

This is a potentially very interesting paper which needs very major revisions so that it makes clinical sense. The pharmacological studies should be clearly differentiated from the clinical; studies which should be interpreted in light of recent knowledge.

Consult the Chapter in "contraceptive Technology" by Trussell et al.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.