

Reviewer's report

Title: A three-year longitudinal evaluation of the forearm bone density of users of etonogestrel- and levonorgestrel-releasing contraceptive implants.

Version: 1 **Date:** 27 September 2007

Reviewer: Catherine d'Arcangues

Reviewer's report:

General

This is a progress report of a comparative study of two implantable contraceptives (Implanon and Jadelle) and their effect on bone mineral density (BMD). Earlier data, collected at 18 months, were published in Human Reproduction in 2006. This paper presents 36 months data. Compared to previous longitudinal studies on this issue (4 on Norplant and 1 on Implanon), this one is larger in size and with longer follow-up. The question is clear and the methodology is well described.

The authors do not provide sufficient data on the subject characteristics for a full interpretation of the findings. They refer to the earlier publication for information on the women recruited to the study. However, this paper should stand on its own for full appreciation. Furthermore, of the 111 women enrolled, 75 provided data at 36 months (39 Jadelle users and 36 Implanon users) and it would be useful to know the characteristics of these two sub-groups.

One important piece of information is the type of contraception used just before insertion of the implant, particularly relevant as there was no wash-out period. It is stated that 9 women were in amenorrhea at admission, secondary to DMPA use. Are these women still in the study ? Are there other DMPA users still in the study ? What methods of contraception were other women using on entry into the trial, who provided 36 months data ?

It is generally accepted that Norplant and Jadelle are equivalent from a clinical perspective. Previous longitudinal studies of current Norplant use have shown no change in BMD with time, including at the distal radius. Cross-sectional studies of current Norplant use show no difference in BMD - including at the distal radius, compared to users of non-hormonal methods. The only prior study of Implanon, a two-year longitudinal study, found no change in distal radius BMD with time. The authors did not find any change in BMD at the ultra-distal radius but how do they explain their finding of a significant decrease in BMD at the distal radius among both groups of implant users ? Could such factors as the BMD at baseline, the change in BMI with time, other characteristics of the subjects have played a role ? This merits further discussion.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Include data on the characteristics of the 39 Jadelle users and 36 Implanon users who provided data at 36 months.

Expand the discussion to explain finding of decreased BMD at distal radius in both groups of implant users (not consistent with previous data).

Edit second paragraph of the discussion which includes too many "although", "however", "albeit".

Edit paragraph before last of the discussion which is unclear.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

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