Reviewer’s report

Title: Association of Endogenous Progesterone Levels in Young Women Using Hormonal Contraception with Recent HIV-1 Infection

Version: 1 Date: 01 Nov 2018

Reviewer: Leslie Meyn

Reviewer’s report:

This was a retrospective analysis of a subset of samples from a large multicenter trial that evaluated the safety and efficacy of a vaginal microbicide gel. The objective of this sub-analysis was to evaluate the association of endogenous progesterone levels in women who were not using hormonal contraception and those using DMPA and Net-En with recent acquisition of HIV infection. This study was likely underpowered to find significant associations, which the authors acknowledged, but does investigate a possible mechanism by which DMPA use may contribute to increased susceptibility to HIV infection.

I have a few minor comments:

1. In the methods, ‘3 monthly intervals’ is confusing. It could be interpreted as being sampled at 3 1-month intervals or at 3-month intervals. I would suggest changing the wording to tested at 3-month intervals for clarity.

2. Please include the length of follow-up for the women included in this study.

3. Provide the median time to first HIV-positive sample for the sero-converters and median length of follow-up for those that remain sero-negative.

4. Provide the breakdown of women who were randomized to use the placebo gel and the active microbicide gel. Did the active gel impact HIV acquisition in the parent study? Was there a difference in serum progesterone levels between active and placebo among sero-converters and sero-negative women or those using HC and not using HC? An association between endogenous progesterone level and sero-conversion may have been masked by microbicide gel use.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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