Reviewer's report

Title: Prevalence of anemia before and after initiation of antiretroviral therapy among HIV infected patients at Black Lion Specialized Hospital, Addis Ababa, Ethiopia: a cross sectional study

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Reviewer: SCOTT DRYDEN-PETERSON

Reviewer's report:
The authors aimed to examine longitudinal changes in hematologic parameters in patients with HIV infection before and 6 months following ART initiation. Similar to what has been described in many contexts globally, including in Ethiopia where this study was performed, ART initiation is associated with substantial reduction in anemia. While some aspects of the description should be improved (as noted below), the study and analyses appear to have been performed well. In my view, the analysis provides a good illustration of the impact of ART on hematologic toxicity, but does not offer new observations or perspective.

Major:
1) Ideally, analyses of hemoglobin concentration would not merge measurements for men and women. As noted, normal values for hemoglobin vary by sex. Combining together increases the variation in measurement and potentially obscure important differences in response.
2) Would add a figure, if journal specifications permit, that plots mean (sd or IQR) at baseline and then 6 month later for men and women. Would be illustrative to reader. I think would be more helpful than current Figure 1, which I find confusing (adds up to greater than 100%).
3) Authors emphasize the increase in macrocytosis. This is almost certainly due to the use of zidovudine in about a quarter of patients. In the manuscript, they should note whether the macrocytosis is limited to the group receiving zidovudine.
Minor:

1) Manuscript could benefit from careful editing to improve phrasing in English.

2) In paragraph beginning at line 71, the authors seem to mischaracterize the risk of zidovudine. The vast majority of patients on zidovudine do not develop hematologic toxicity, aside from macrocytosis. However, a subset experience severe toxicity. Would remove statement about AZT being 'probably the most common'. Even when zidovudine was part of standard first line regimens, HIV-mediated anemia was more common than zidovudine-mediated anemia. Currently, global use of zidovudine has declined dramatically so the contribution to anemia is less.

3) Need to be consistent re: ART vs HAART. Given that ART is now the most accepted term, would remove HAART from title and text.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No

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?
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