Reviewer's report

Title: Weight and height Z-scores improve after initiating ART among HIV-infected children in rural Zambia: a cohort study

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Reviewer: Luisa Galli

Reviewer’s report:

This study describes improvements in weight- and height-for-age z-scores in HIV-infected children in rural Zambia. The manuscript is clear, well written and statistical methods adequate. The authors observed that after 2 years of ART about half of children remained underweight and stunted and, consequently, they conclude that ART was not able to completely modify effect of HIV infection.

1. Major compulsory revisions

Methods: The authors stated that children were evaluated every 3 months and blood specimens were obtained, but they not specify which type of blood evaluation was performed. Were CD4+ T-cell% evaluated at 3 months check? If yes, why changes in WAZ and HAZ were not compared with changes in CD4+ %, as a marker of ART success?

This is a very important issue: if children have not a strong and durable immunereconstitution (due to lack of compliance or ART resistance mutations, which cannot be monitored in resource-poor settings) they will not have a full recovery of growth. If CD4+ %/counts are not available after ART initiation, the authors have to report this lacking and they could discuss this limit in the discussion.

Moreover, ART regimens available in 2007-09 and described in the methods were probably suboptimal. As a matter of fact, WHO 2010 guidelines (which were cited as ref 5, but were not clearly followed during this study) suggest ART including protease inhibitors in selected conditions. Therefore, in the study population, HIV infection might have been poor controlled and authors cannot exclude that lack of sustained improvement in growth may be due to suboptimal ART.

2. Minor essential revisions: change ref5 to WHO guidelines followed during the study period. Ref 8 lack year of publication.

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

Quality of written English: Acceptable

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

I declare that I have no competing interests