Reviewer’s report

Title: Anaemia in HIV-infected children: Severity, types and effect on response to antiretroviral therapy.

Version: 1 Date: 5 July 2012

Reviewer: Ezekiel Mupere

Reviewer’s report:

Overview
The focus for this manuscript is scientific research. The gap understudy was well described. The paper is original. The authors aimed to determine the severity and types of anemia among HIV infected children and the effect of its presence on short term response to antiretroviral therapy. Authors identified eligible children for ART with/or without baseline anemia and were followed for 6 months to measure response to ART using viral load suppression and immunological markers. Authors found no significant difference in clinical and immunologic response to ART between anemic and non anemic children. Virologic suppression at 6 6 months of ART was significantly higher in the non-anemic compared to anemic children. Severity anemia was associated with disease progression; ART reduced morbidity and improved clinical, immunologic and virologic status.

This study generated important findings to the audience of BMC Pediatrics because anemia is an important clinical problem in HIV infected patients with huge burden in children, yet its effect on response to ART in HIV-infected children is not known. This manuscript fills in this gap. The claims have been well articulated in the context of previous literature.

The human subject and ethical issues, study procedures, study outcomes and exposure status, and interpretations are well documented. However, the following may need to be addressed before publication.

Major Compulsory Revisions
1. The design is not clear. It appears the authors employed a hybrid of two designs. A cross-sectional design to establish the prevalence, severity and types of anemia among ART-naïve HIV-infected children and a cohort to establish the effect of baseline anemia on subsequent response to ART. It also not clear whether the cohort was prospective or retrospective. This should be clarified.
2. The study participants for the cohort design were not explicitly described.
3. It is not documented whether the variables such as viral load and CD4 met the assumptions for using the student t-test.
4. Study limitations and their rebuttal were not explicitly articulated in the discussion. The study appears to have had power issues to establish the effect of
baseline anemia and subsequent response to ART. Only 98 participants were started on ART in time for the study, yet sample size estimates were 64 per group.

Minor Essential revisions
1. Definition for growth indices.

**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.

**Declaration of competing interests:**
I declare that I have no competing interests