Reviewer’s report

Title: Emergency blood transfusion practices among anaemic children presenting to an urban emergency department of a tertiary hospital in Tanzania

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Reviewer: Ogunlesi Tinuade

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Issues of severe anaemia and blood transfusion are prominent in paediatric practice in the Low and Middle Income Countries setting. Therefore this manuscript has a merit. Matters of concern are as highlighted below:

Abstract: The definition of anaemia and severe anaemia adopted for the study must be stated in the abstract. In which group of children was the mortality higher: untransfused severe anaemia or anaemia generally?

Introduction: This section of the manuscript dwells extensively on pre-existing Tanzanian data. While that may be essential in bringing forth the justification for the study, it is imperative to review similar literatures from other parts of Africa as well as relevant parts of Asia, all of which share developmental index characteristics with Tanzania. Although the study appears not to be about the causes of anaemia but it will be added advantage, if the authors can briefly state, the leading aetiologies of under-five severe anaemia deserving Emergency Room treatment.

Method & Results: A description of the scope of services and calibre of personnel receiving critically ill children in the ED of the hospital needs to be provided as this needs to be put into perspective in interpreting some of the data. Why was data analysis based on 99% Confidence Interval rather than the conventional 95% Confidence Interval? What is "door to transfusion time"? This has to be clearly defined. Were children who had earlier been transfused at other facilities recruited into the study? What proportion of the study population was that? How did this subset compare with those who were brought straight from home, in terms of severity of illness and outcome? Did the subjects who died in the ED succumb before the arrival of blood from the laboratory or during transfusion? What was the pattern of complications among children with severe anaemia who should have been transfused in the ED but were not transfused? The commonest complication of severe anaemia in under-five children is cardiac failure - there was no documentation of this important outcome in this study!

Discussion: This is fairly well written but lacks in depth as most studies subjected to comparison with the present study were derived from Tanzania. How about comparisons with similar studies from Western and Southern parts of Africa as well as South east Asia? Repetition of results
should be avoided as only the interpretation and explanation of the findings and their implications are required in this section. Findings must be explained in depth rather than just mentioning them - for example, why were physicians in the ED missing the diagnosis of severe anaemia? Did it have to do with the level of training or lack of appropriate management protocols? What may be done to reduce the proportion of missed diagnosis? What practical steps may be applied towards reducing the door-to-transfusion time in this setting? Can there be a difference in the pattern of aetiologies among children who deserved blood transfusion and were not transfused and those who were transfused? For example, what role did severe malaria and sickle cell diseases play in this study?

References: Sufficiently current but literatures from other parts of Africa and Asia are highly desired.

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.

No

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 recommend additional statistical review

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