Author’s response to reviews

Title: ASSOCIATION OF VITAMIN D AND DIARRHOEA IN CHILDREN AGED LESS THAN FIVE YEARS AT MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM: AN UNMATCHED CASE CONTROL STUDY

Authors:

Imran Hassam (imranhassam@yahoo.com)
Rodrick Kisenge (saroriki@yahoo.com)
Said Aboud (aboudsaid@yahoo.com)
Karim Manji (kmanji@gmail.com)

Version: 1 Date: 06 May 2019

Author’s response to reviews:

RESPONSE TO REVIEWERS

REVIEWER 1 – IBRAHIM BUCAK

I read your article carefully. Although her fiction is beautiful, it is unclear what the causes of diarrhea are. I see this as a shortcoming. In the literature, "Is there a relationship between low vitamin D and rotaviral diarrhea? Bucak IH et al. Pediatr Int. (2016)". This article is about rotavirus and vitamin D level is low. If you have data about etiology of diarrhea, you must specify it.

Response

Thank you for the comment. This study was looking at the association of vitamin D deficiency and diarrhoea. However, the study findings could not conclusively identify any association between the two. The only factor that showed significant association with diarrhoea was severe acute malnutrition.

REVIEWER 2 – BALAKRISHNAN RAMAKRISNA

"SAM" is mentioned for the first time without an expanded form.

Response: Thank you. This has been re-written correctly.
Definitions

Vitamin D deficiency and insufficiency were defined based on Endocrine Society recommendations. The Institute of Medicine recommended much lower cut-offs to define VDD and VDI. Would the authors like to consider using these rigorous cut-offs, as they may be accused of magnifying the problem of VDD by using liberal cut-offs.

Response: Thank you for the comment. The authors decided to use the cut off values from Endocrine Society because previous studies done in Tanzania have used these cut-offs and local clinical practice is based on these cut-offs. Hence, this study would serve to provide a local clinical guidance and also be relevant when comparing to studies which have used a similar cut-off.

Methods

* Unnecessary details and repetition can be trimmed, and relevant and essential details can be provided.

* "Vitamin D levels were measured using 25(OH) EIA™ (immunodiagnostics, UK)." More information to be provided regarding the kit including Catalog number, city of manufacturer, and whether the kit measured both D2 and D3.

* Were duplicates or triplicates used during laboratory analysis?

* Details of the multiple logistic regression model should be provided.

Response: Thank you for the comments.

- The kit is from Tyne & Wear, UK. Product number AC-57SF1. It measures D3 levels only. This point has been added to the methods section.

- Duplicates were used in laboratory analysis as mentioned in the methods section.

- What type of details is the reviewer asking for in the logistic regression model? We request for further elaboration from the reviewer on this point.

- The methods section has been refined to reflect the comments of the reviewer
Results

* Mean and SD age for each group should be separately provided.

* Details of the diagnoses in the Cases and Sick Control groups should be provided in the text of Results.

* "Multiple regression analysis showed that a child with severe acute malnutrition was 2.36 times more likely to have diarrhoea, independent of other factors (95% CI: 1.06 - 5.28, p 0.036):" Which was the dependent variable - SAM or diarrhoea? If diarrhoea was the dependent variable, then it would be more appropriate to say that children with diarrhoea were more likely to have SAM rather than vice versa. The sentence should be rephrased accordingly.

Response: Thank you for these suggestions.

- Mean and SD for each age group has been added to the results section
- Details of diagnosis in cases and sick controls has also been added.
- The interpretation of the logistic regression findings has been rephrased as suggested.

Discussion

* "As far as SES is concerned this finding is in line with study in Lima, Peru which showed that low SES does not independently determine diarrhoea incidence (21)." The present study did not evaluate diarrhoea incidence. How is this reference relevant or comparable to the present study?

* What is the relevance of SAM to this study? It can be elaborated if it is relevant and it was studied, otherwise it can be deleted.

Response: Thank you for the comments

- The reference about Lima (21) has been removed as this study did not look at diarrhea incidence.

- SAM was one of the diagnosis in the sick controls, which could have been responsible for high prevalence of VDD in the sick controls.
Tables

* In Table 2 and Table 3, the percentages and comparisons should be across rows and not across columns.

* In Table 4a, the percentages should be calculated across columns and not across rows.

* Table 5, Multiple Logistic Regression: All variables appear to be binary. Is it Binary Logistic Regression? The Table should be presented differently with the reference category shown along with numbers, odds ratios and CI. As now presented, it is difficult to understand whether the chances of VDD are higher in one group versus the other.

Response: Thank you for the suggestions.

- The percentages in Table 2, 3 and 4a have been rewritten and comparisons have been rephrased correctly as the reviewer suggested.

- The logistic regression is binary and not multiple. The error has been corrected in the manuscript in the results and discussion section. The table should now be clear.

Figures

* All the Figures can be deleted. They do not add anything to the paper.

Response: The authors agree. All figures have been deleted.