Reviewer's report

Title: Survival status and factors associated with treatment outcome of severely malnourished children admitted to Ayder Referral Hospital: A cross-sectional study

Version: 1 Date: 20 Jan 2017

Reviewer: Robert Bandsma

Reviewer's report:

This research group from Ethiopia describes the outcomes and risk factors for poor clinical outcome of a cohort of children admitted with severe malnutrition. A number of papers from the region have been published on outcomes of children with SAM. This study does provide potentially interesting data specifically for an Ethiopian setting. However, the manuscript in its current version contains a significant number of important flaws that would need to be addressed.

In general the manuscript would benefit from editing by a native English speaker. There are numerous typos and grammatical errors. For example: "Besides this, this report also proved that millions of young children agonize from the ominous effects of undernutrition [1]." (page 3 line 33-35) is an unusual way of stressing the importance of undernutrition. In addition, authors need to carefully go through their references as many are so dated they are not relevant anymore and important published work on the topic they are focusing is missing (for example Maitland et al PLOS MED 2006).

Abstract

1. From the abstract introduction it is unclear what knowledge gap is being addressed.

2. "The association was declared statistically significant at p - value of < 0.05." Although important, this detail can be deleted from the abstract.

3. "Out of 195 children admitted with SAM, the cure, death, defaulter, nonrespondent and transferred out rates were 22.1%, 3.6%, 43.3%, 9.2% and 21.5% respectively."

   It is unclear how cure, nonrespondent and transferred out was defined. I would focus on main outcomes in the abstract and provide definitions of outcome if unclear.
4. "Treatment using ready-to-used therapeutic food provided a longer all-cause mortality protection than the treatment using F-75 and F-100 (p < 0.010)." This is unclear. F75 is provided to all hospitalized SAM patient only in the first phase of treatment and followed by F100 or RUTF after which patients are generally discharged on RUTF. It seems not useful to compare F75 with F100 or RUTF use in relation to treatment outcome.

Introduction

1. Page 4 line 16. I think years is meant instead of days.

2. Page 4 line 17. The statement about 30% is incorrect. An outdated reference is used. See the lancet paper by Black in 2013.

3. Page 4 line 44. I think a MUAC of <11.5 cm is meant, which corresponds to the definition of SAM.

4. Page 4 line 50-55. This statement is unclear. Is meant here that mortality rates of children with marasmus are 20-30% and of kwashiorkor 50-60%. This is incorrect. Outdated references are used here.

5. A clear research question, and aim is missing from the introduction.

Methods

1. As there is no clear research question or hypothesis it is unclear what the sample size calculation is aiming for.

2. It is unclear what is meant by cured. Discharge from hospital? Nutritional recovery?
Results

1. Page 8 line 42-50. Comparing length of stay between the groups seems meaningless as children in one group died or absconded. Identifying when during the admission would be most likely to die, would be meaningful to determine.

2. It is unclear what we are learning from the observation that edema improves from admission to discharge and anthropometrics improve. This is completely to be expected. What would be more interesting to document is what percentage still have characteristics of SAM at the time of discharge for example.

3. Page 9, line 17. How is diarrhea defined.

4. Page 9, line 25-30. Authors state the use of F75, F100 and RUTF in different phases but the numbers are unclear. If 58% of children on phase 2 receive RUTF, what did the other 42% of children receive for example?

5. Page line 35-40. How can children from the censored group recover if the definition is death, defaulters and non-respondent.

6. Figure 5. There are too many lines making it challenging to interpret the figure.

7. See also comments in abstract about the results, which also have implications for the figures and tables.

Discussion

The discussion needs to be rewritten after the results section has been changed as some of the results are not very meaningful and should not be discussed.
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.

No

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I am able to assess the statistics

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Not suitable for publication unless extensively edited

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