Reviewer's report

Title: A longitudinal study investigating quality of life and nutritional outcomes in advanced cancer patients receiving home parenteral nutrition

Version: 2
Date: 20 May 2014

Reviewer: Kavitha Menon

Reviewer's report:

The manuscript is well-written that addresses some of the critical issues in cancer nutrition through the use of standard methodologies and robust statistical methods. I enjoyed reading the manuscript, however, found that certain details missing. The addition of the following details may improve the quality and reliability of the manuscript.

Major revisions

Methodology:

1. Justification of sample size estimations in relation to the objectives of the study is missing in this manuscript. A few lines may be added to the manuscript with the precision levels. Was the final sample size enough to investigate the objectives of this study? If not, a word of caution regarding the generalisability of the results need to be included in the limitations.

2. Details of evaluation of compliance to HPN is missing. Were there any methods used in collecting the data on compliance and the regular intakes were assessed?

3. It is not clear who dispensed the HPN to the patients and whether they were trained to dispense the same alike to all the patients? Had the patients completely consume the HPN during their feedings; and was it considered during the data analysis? This information is important given that the data analysis has compared the nutrient intakes at different time points.

4. What was the basis for the nutrient contents (i.e. Calorie, protein etc.) of the selected HPN? Did the authors follow any guidelines or it was a random selection? Also, were the other metabolic complications of these participants were considered before the quantities of calorie and protein contents were decided? Were there any other micronutrients included in the HPN? It is important to give a brief description of the composition of these HPN.

5. The participants were in the advanced stage of the disease, it would be important to consider the nutritive composition in relation to the tolerance to HPN, especially in participants with associated liver and kidney problems. Were there participants with liver and kidney problems?

6. What were the therapy goals to stop HPN in the participants? Were all the
participants able to tolerate the HPN? Were there any who eventually had metabolic complications?

7. It would be good to state the follow-up duration at the beginning of the methodology for better clarity. Although the analysis considered participants with 3 months HPN and less, in the results section (Lines 253-256) the duration of follow-up was mentioned until one-half years. This is confusing.

8. In the statistical analysis section, a brief description of various response parameters used in the GEE models and the criteria for their selection in the final multivariate model with the tests used for the model fitness should be added.

Results:

1. In the results section, the P value for significant differences should be reported at the relevant relevant places. Although the authors have mentioned the significant differences it would be more meaningful to state the major findings in the text with the effect size, direction of the change with its confidence intervals (CI) ad respective P values.

2. The Table 3 suggests a significant difference in calorie and protein intake between the two groups of participants, however, the possible reasons and their implications were not addressed in the discussions.

3. The results from the GEE model was not well explained in the results section. Further, the unit changes (beta) or the effect size for QoL obtained from the GEE analysis may be translated to small, moderate or large change.

4. The GEE model is adjusted for a few potential predictors, however, would be more interesting to see whether the stage of the disease, compliance to the HPN, type of cancer or SGA class (moderate vs severe malnutrition) had any influence on the QoL. Although nutritional status assessment parameters included SGA (in the statistical section) this was not mentioned in the final GEE results table (Table 6).

Discussion:

1. Lines: 286-288: Instead of the term "recommend" it would be more appropriate to use the term "suggest" as the study sample size is insufficient for this.

2. The section needs to address the implications of better nutrition through HPN on QoL, nutritional status and functional outcomes. This is not explicitly narrated in the discussion section.

Discretionary revisions:

Tables:

1. Table 1: The first half may be made more compact by combining the columns 1 & 2 and the 3 & 4 together. Footnote for the SGA classification details need to be added. The second half of the table, column 1 & 4 can be merged and 2 & 3 can be merged.
2. Table 2: The first half may be made more compact by combining the columns 1 & 2. Stage at diagnosis, the numbers in the column 4 are not totalling up to 15. Also, it is not clear what F/U means. Footnote for the SGA classification details need to be added.

3. Table 3: The units are missing for the parameters/variables. If the parameters are scores it need to be mentioned. Similarly, for energy KCal is presented, however, for protein there is no unit mentioned. In addition, it is not clear whether the nutrient intake reported from HPN was for per day? The test used to determine the P value need to be noted in the footnote section of the respective tables.

4. Table 4: Columns 1 and 4 could be merged. The table may be excluded as the baseline scores are reported in Table 5; a few lines in the results sections may be added to emphasize the important points.

5. Table 5: The units are missing for the parameters/variables. The test used to determine the P value need to be noted in the footnote section of the respective tables.

6. Table 6: The units are missing for the parameters/variables.

Minor essential revisions:

List of abbreviations used in the text was not summarized at the end of the paper.

Reference No: 9, 12, 13, 16, 19, 27, 33. The complete list of authors needs to be instead of et al. as observed in all the BMC articles.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

No competing interests