Reviewer's report

Title: Risk factors of metabolic syndrome among adult Sudanese sickle cell anemia patients

Version: 1 Date: 18 May 2018

Reviewer: Karen Cordovil

Reviewer's report:

The answer to Reviewer DrCordovil:

1. It was not clear whether the research was with all genotypes or only with the Hb SS genotype. In the title is SCA and throughout the SCD text. The authors should make clear when unlocking the title, in the text and in the tables that the genotypes were placed in the study (1).

All patients are Hb SS genotype as documented by hemoglobin electrophoresis. This have been added clearly in methodology section 80-81.

Responded Dr. Cordovil (2) - The error in the work persists. There is a big difference between sickle cell anemia and sickle cell disease. We call Sickle anemia only the Hb SS genotype, whereas sickle disease is all other genotypes (HbSS, HbSC, HbSD, HbStal etc.). So the description of the study is wrong because it is mixing different concepts. If the authors studied patients with HbSS, the discussion in the study should primarily be based on similar studies with patients with SCA. From a nutritional point of view patients with SCD may be very different.

2. In the reference session, it is necessary to standardize them. Review one by one, according to the journal guidelines (1).

All references were revised to ensure matching with the guideline

Dr. Cordovil's answer (2) - References are still in trouble. Review each reference again in detail because I have identified some errors. For example: "Ayuo, P. O, Abinya, et al. Cardiovascular

3. Review all references in the text. For example, in the discussion (line 163-166) the text talks about waist circumference but reference number 8 is related to a study of SCD in children. Check the references in the text (1).

We checked and add the right reference

Answer from Dr. Cordovil (2). Ok

4. The waist circumference has different patterns. In Brazil, it is considered 94 cm for men and 80 cm for women. But you have put different references. that's right Are the cut-point values you put in the latest international literature? (1)

Yes, they are. NCEP ATP III criteria suggested the cut-off points of waist circumference should be ethnic specific.

Dr. Cordovil 2 Response (2) -Waist 95 circumferences were measured to get three different readings at the level of the umbilicus, 96 between lower margin of the lowest rib and superior surface of the iliac crest, the mean value 97 was considered as a reference value. The tape was placed three times around the widest 98 area at the hip region to measure the hip circumference.

5-Comment by Dr. Cordovil (2). Authors should submit the article without the comment session on the side. For the text is totally unconfigured.

6- Comment by Dr. Cordovil (2). The authors should improve the presentation of layout/graph of the tables, as it is not satisfactory for publication.
7- Comment by Dr. Cordovil (2). The authors should improve the Layout / Graphical presentation of the figures on pages 22 and 23. Identify the figures in a standardized way (example: sometimes "patients" are written), and put them below the tables as they are loose in the article.

8- Comment by Dr. Cordovil (2). Make clear what the authors do with the Body Mass and the Stature harvested. At no point is he saying in the methodology that was used to calculate the BMI and neither were the cutoff points of BMI.

**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.
Yes

**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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Please indicate the quality of language in the manuscript:
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