Reviewer’s report

Title: Comparative study of sickle cell anemia and hemoglobin SC disease: clinical characterization, laboratory biomarkers and genetic profiles

Version: 1 Date: 25 Feb 2017

Reviewer: Jane Little

Reviewer's report:

A description of HbSS vs. HbSC in a Brazilian SCD population. This is an important and under-emphasized topic, and their report is straightforward and informative, albeit not surprising.

However, I find the presentation and discussion of results confusing and perhaps misdirected. For instance, the description that the majority of SCD patients are between 6 and 10 or 20 and 30 conceals the more important fact that 78% of the whole population is under 30. Why is their population so young? Further, since SCA patients are known to have more life-threatening disease, it would be worth also reporting whether the ages differ between subgroups, SS and SC, and whether the age of diagnosis differs by genotype or patient age, since older patients without access to newborn screening and patients with more mild disease might have been diagnosed later in an earlier era but not currently. The educational analyses, as reported, are also confusing, since a younger population will not have finished elementary school. Perhaps school progression by age group (how many children over 10 finished elementary school and how many over 20 finished high school) might be more informative. In addition, I find some of the categories puzzling, such as number of brothers or parents with sickle cell disease (the latter category including cousins and aunts and uncles) and self-described skin color. It feels more appropriate to describe this as what proportion of all patients self-identify as African descent.

Overall, I felt that this work could better highlight its findings through a more succinct presentation, with targeted descriptions of the data and a briefer discussion.
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?
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Yes

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I am able to assess the statistics

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