Reviewer’s report

Title: Patterns of Bone Marrow Aspiration Confirmed Hematological Malignancies in Eritrean National Health Laboratory

Version: 1 Date: 14 Nov 2018

Reviewer: Matthew Barth

Reviewer's report:

This manuscript is a retrospective review describing the diagnosis of hematological malignancies on bone marrow analysis in the African country to Eritrea which has previously not been described. While purely descriptive and retrospective, the initial description of rates of disease adds to knowledge base for future research in this African nation and allows for comparison of disease rates to other countries in the region. The methods are generally appropriate and the data presented is mostly complete.

Comments:

1) In the background lines 39-41, include CML in the list of myeloid disorders.

2) The review is of all bone marrow procedures performed over a two year period and reports that 52 out of 207 were diagnosed with a hematological malignancy. That means that 155 were not diagnosed with a malignant disorder. Some description of what these other findings were in non-HM involved marrows may also be helpful. There is also no mention of what the indication was for the bone marrow procedures which may also be of interest considering a large number did not have a malignant disorder and those that did probably had a presumed malignant hematological disorder before the bone marrow was performed. The authors also state "As there is no functioning histopathology unit in Eritrea, we were forced to exclude HMs that require tissue biopsy like lymphomas and only analyzed patients who underwent bone marrow aspiration to confirm the HMs". This implies that marrows were performed to confirm hematological malignancy, but most did not lead to a diagnosis of a hematological malignancy. Please explain further. Also, while lymph node biopsy would generally be used to diagnose lymphoma, a diagnosis of lymphoma can be made on marrow. Are some of the 155 non-HM lymphoma involved marrow not reported here due to not including lymphoma?

3) Table 2 is initially a little confusing as to what the percentages are in relation to the total numbers listed. If the table is diagnosis by age then perhaps consider removing the total at the bottom of the table listing the total number in each age category since the percentage is by age group.
4) There is a patient under 20 years of age diagnosed with CLL. This would be an incredibly rare diagnosis in this age group and if truly the correct diagnosis may even be reportable itself. Additionally, nearly half of the CML cases were diagnosed under the age of 40 with 20% under the age of 20. This is again a disease which, while not impossible in a pediatric aged patient, is generally very rare in that age and much more common in patients over 60 years of age. Why is there such a predominance of CML in younger patients in this cohort?

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.

Unable to assess

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 am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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