Reviewer’s report

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

**Version:** 1  **Date:** 23 Oct 2018

**Reviewer:** Nader Kim El-Mallawany

**Reviewer's report:**

This manuscript represents an important contribution to the literature on hematologic malignancies in Africa. With the widespread limitations on hematopatholgy resources throughout the region, this work provides valuable insight into the findings of bone marrow aspirations and the clinical patterns associated with them.

The major critique of the manuscript is that the authors may improve it by narrowing its focus. Based on the abstract, the paper appears to have a focus on determining the "patterns and distribution of hematologic malignancies." However, the study is not designed to determine this, as it only focuses on patients with bone marrow aspiration data, thereby excluding the vast majority of lymphoma patients. Nonetheless, there are plenty of important and informative data in this study, and it has the potential to make an important contribution to the medical literature. A potential alternative focus of the paper could be the clinical features associated with these malignancies diagnosed by bone marrow aspiration.

Some specific points of feedback:

1. The abstract should not contain so many abbreviations

2. The conclusion of the abstract does not match the study design or results

3. The methods section should include a description of how the bone marrow aspirates were analyzed, what types of stains were used, whether the cells were analyzed solely based on morphology, and what algorithms were used to differentiate the diseases. as it is the reader must simply have blind faith in the accuracy of expert opinion. although expert opinion may be accurate, in comparison to hematopathology labs in high-income countries where access to technology like flow cytometry, cytogenetics, and immunohistochemistry stains of histopathology specimens are available to strengthen the accuracy of diagnoses. this could perhaps be another area of focus, because although it is not necessary for this paper to have the supporting data from such highly specialized and costly diagnostic tools, it would be
informative for the reader to be able to understand the diagnostic algorithms that helped conclude the diagnoses in the setting of limited resources.

4. The first line of the discussion section again focuses on a more epidemiological concept, while this paper is not designed to do this. However, the conclusion does indeed highlight the important clinical patterns associated with the malignancies that were diagnosed via BMA. This would make a more substantial and valid focus of the discussion section, and should probably be the most important point highlighted in the discussion section.

Some minor points:

1. In the results section, there are not enough patients to comment on gender predominance amongst the subsets of patients within each disease category

2. The background section may be shortened, as it does not need provide such a comprehensive background. Instead, more details could be provided about the details of the bone marrow aspirate analyses.

**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.

No

**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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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

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