Reviewer’s report

Title: Breast Cancer in Ethiopia: Evidence for geographic difference in the distribution of molecular subtypes in Africa

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Reviewer: Yinghao Su

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In this study a total of 114 cases of breast cancer from a single hospital in Ethiopia of Eastern Africa area were enrolled in analysis of molecular subtypes determined by IHC and FISH. The study revealed that Luminal A subtype is the most common subtype, concordant with other study reports from Eastern African countries. This is different from West and central Africa where the hormone receptor negative tumors were reported to be the most common molecular subtypes. The author also found that Ethiopian breast cancer patients exhibit highly proliferative Luminal B tumors at young ages. The study methods such as tissue microarray, IHC, FISH, scoring and subtyping criteria are proper. The manuscript is generally well structured and written. The study results and limitations are clearly presented. There are a few critical concerns that need authors to address and major modifications are needed before accepted for publication.

1. One of major concern is too small sample size from a single hospital with potential subject selection bias. Based on this study it is not acceptable to conclude that "Our findings suggest geographic variability in the distribution of the molecular subtypes of breast cancer in Africa and hence have important clinical and policy implications for breast cancer control and treatment in Ethiopia." Authors may overstate their findings. I would suggest authors to include other study results from Eastern African countries in the Table 4 (page 9) to strengthen this study. The conclusion sentence need to be modified.

2. Another concern is the relatively high rate of missing clinicopathological data (histological type, grade and tumor stage), which further decreased statistical power in this small sample size study. The results that "There were no statistically significant differences in tumor grade, histology, and stage between the molecular subtypes of breast cancer" (in Abstract) are not reliable. I think the missing histological type and grade data can be obtained through reviewing TMA slides (with HE staining) by a pathologist. Other study results from Eastern African countries may also be considered to include as a meta-analysis, if applicable.

3. Table 1 is not necessary. It can be replaced by one sentence.

4. Typos: Page 9, Lines 44, 45: "Luminal A (36%)" shall be (40%), "...represents 24%" shall be 23%, based on the Table 4.
African countries
(Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Reunion, Rwanda, Seychelles, Somalia, Tanzania, Uganda, Zambia, Zimbabwe)

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.
No

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.
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