Reviewer’s report

Title: A viral genome wide association study and genotypic resistance testing in patients failing first line antiretroviral therapy in the first large countrywide Ethiopian HIV cohort

Version: 1 Date: 09 Apr 2019

Reviewer: Karin Metzner

Reviewer's report:

I did not review the first submission, thus, I take the liberty to add some suggestions/comments that might further improve the revised manuscript.

1. In agreement with reviewer 2, I would delete "cost-efficient/-effective" in the abstract (last sentence) and discussion (line 260) describing the NFLG assay. Cost efficiency was not determined in this study.
2. I might have missed it. If not, please add the years of enrollment of the study participants. Is this a historical group of patients starting ART in 2005 or rather a recent group of patients?
3. In table 2 (as already done in table 3) it would be very beneficial to always show all figures, i.e., xx/yy (zz%), since the denominators vary a lot. Actually, it would be also helpful to add always the denominator in the text.
4. The 16 randomly selected patients (line 58) were chosen from the group of patients with VL >1000 at month 6, weren't they?
5. In line 94 I would repeat "using the 150 copies/ml and 1000 copies/ml,". Since two categories of virological failure have been defined, it is also helpful to repeat the information of the categories in lines 112 and 197.
6. Figure 1 would gain value by adding distances.
7. Comparing the data displayed in figure 2 with the data given in supplementary table S1, some discrepancies appear. For instance, the M184V mutation was detected at month 6 in patient ET02 based on GRT, however, the virus was susceptible for 3TC/FTC at month 6 based on NFLG, i.e., the M184V mutation was not detected. A comparison of sequence results derived by GRT and NFLG should be included.
8. It would simplify comparisons by reordering supplementary table S1 by ID (as done in figures 2 and 3).
9. Please add the ID of the missing patient in line 512.

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 am able to assess the statistics

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

Acceptable

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