Author's response to reviews

Title: Human Immunodeficiency Virus (HIV) types Western blot profiles as surrogate markers of HIV disease progression and predictors of vertical transmission among pregnant women in Harare, Zimbabwe

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Author's response to reviews:

Dear Editor

Thank you for reviewing our manuscript ID MS: 7764721783949173 entitled “Human Immunodeficiency Virus (HIV) types Western blot profiles as surrogate markers of HIV disease progression and predictors of vertical transmission among pregnant women in Harare, Zimbabwe”.

All reviewers’ comments have been addressed in line with their suggestions as detailed below including correction of grammatical errors. Changes made are shown in red text in the revised manuscript.

A. Major compulsory revisions
We have included a more detailed limitation of our study, addressing the issues of matching of SdNvp therapy and why we could not apply the conditional logistic regression model as has been raised by reviewer in the following sections:

• Abstract’s conclusion section lines 8-9
• Method’s section subheading, “Study Design and Setting”
  o Issue of matching elaborated in lines 7-10
• Main paper, Discussion section, Paragraph 8, lines 1-3.

B. Major additions
Discussion
Also although no reviewer raised this issue, authors felt was appropriate to include in the discussion section some aspects to do with the importance of
predicting the likelihood of vertical transmission in the era of SdNvp offered in these settings. This was discussed in paragraph 6.

C. Grammatical errors and punctuations

1. Title page
   Authors name section
   A comma after “Kerina1, “ has been deleted to read Kerina1

2. Abstract
   • Objective: Line 2 “and/ or” / or deleted and now reads ….progression and vertical…..
   • Results section
     o Line 1, A comma has been added after infection and now reads ….HIV infection,
     o Line 2, s added after infection to read….. infections
     o Line 3-4, “reactivities” changed to reactivity and this change was effected throughout the manuscript
     o Line 7... as “supported “changed and now reads ….as confirmed
     o The last sentence restructured to be more explicit and now to reads, “These women were also 1.4 times more likely to transmit the virus to their infants compared to those who had gag p39 band present, though the numbers were too small to reach statistical significance”.
   • Conclusion
     o Line 1, “A” before lack deleted to read; Lack of……
     o Line 3, genes deleted and now reads,” pol proteins”
     o Line 4-8 has been restructured to be more explicit and now to reads:
     “Apart from its use in HIV disease diagnosis, the WB test could also be used in conjunction with simpler laboratory tests such as full blood counts and patient’s clinical assessment as a relatively cheaper disease monitoring tool, compared to the conventional CD4 or viral load tests required prior to accessing antiretroviral therapy in poor resource settings.”

3. Introduction (Main paper)
   • Paragraph 1
     o Line s1-2, “s” added to disease and now reads diseases
     o Line 12, a comma added after….distinct and now to reads….. distinct,
     o Last sentence modified from… is “important” for accurate ….to is essential, which is more appropriate in this context.
   • Paragraph 2
o Lines 3-5 “Rapid tests……..testing.” has been deleted from this section, now under discussion section, paragraph 1, lines 3-4.

• Paragraph 3
o Line 1,..... that “depict” has been changed to … that detect
o Second last line,” in” added before virtually to read in virtually

4. Methods
o 1. Study Design and Setting
o Line 1, This “is” a…. now past tense and now reads this was
o Line 2, “all” deleted to read ….around the city
o Line 7, Issue of matching elaborated, line 7-10
o Line 9, Acronym of sexually transmitted Infections (STIs) added since it was used later in the manuscript

o 2. Study population and procedures
o Paragraph 1 line 2, since there were many “offers” in this paragraph, this sentence was restructured to read, Pre-and post-HIV test counseling services were readily available.

o 3. Mothers’ and Infants’ Demographic characteristics, Examination and sample collection
o Paragraph 2, Line 2,…..” blood was collected” has been modified to plural and now reads…. blood samples were collected

o 4. Mothers’ Tests
• Paragraph 1
o Line 3 results was added after test to make statement more clearer, and now reads “rapid test result”
o ….“the “inserted before WB test to read “the WB test”

• 5. Infants’ Tests
• Paragraph 1
o Line 1, “s” added to infection to reads infections
o Line 6, too many “considered”s in this sentence; hence this statement has been re-structured to read…. “were regarded as infected intra-partum and those positive thereafter were considered infected after birth”

• 6. Statistical Analysis
o Paragraph 1,
o Line 1 modified from singular “was” entered to plural, were entered
o Line 2 “the” was added before the word time to read … the time
Comparisons of the appearance of WB band profiles of the env, pol and gag proteins between mothers with chronic and those with acute HIV-1 infections were also done.

Last sentence put into plural to read p values of less than 0.05 were considered statistically significant.

Results

1. Demography and Reproductive Health Characteristics of the 58 mothers: 29 transmitting and their 29 matched non-transmitting mothers with chronic HIV infection

Paragraph 1

Line 5...“had spontaneous vaginal deliveries” statement has been cut and removed from the sentence with demography to be included in the upper sentence with other reproductive health issues and now reads “Ninety-three percent of the women were married, 90% had at least one child and all had spontaneous vaginal deliveries.”

Last line has been restructured to read, “Women were generally asymptomatic stage for HIV infection at enrolment”

2. HIV Incidence, Type(s) and vertical transmission among 6 sero-converters: 3 transmitting and 3 non-transmitting

Paragraph 1

Line 5, mean age changed to mean ages

Line 6, “Furthermore” changed to More so

3. Frequency of HIV-1 WB Bands among 58 mothers with chronic HIV infection

Paragraph 2

Line 2, “the” inserted before presence to read, the presence

Line 5...who had” the” replaced with that and now reads who had that

4. Frequency of HIV WB Bands among mothers with acute HIV -1 infection

Last line has been restructured to read, “Lack of antibody reactivity to pol gene proteins, p31, p51 or p66 was significantly associated with early infection, hence absence of these bands on a WB test result could predict acute HIV-1 infection”

5. WB band Profiles of the mother with HIV-1/-2 co-infection

Line 1, “Over and above” is now replaced by In addition to

Discussion:

Paragraph 1

Discussed the advantages of rapid test, lines 3-4 removed from introduction

Paragraph 6

Also in the discussion though not mentioned by both reviewers the authors
have also included a paragraph to discuss the importance of predicting transmitting mothers in these settings.

Last paragraph, We discussed the limitation of the study and why we could not use the conditional logistic regression as raised by the reviewer and that was the reason we advocated for a bigger study to address these shortcomings in our conclusion.

Thank you for all the comments and corrections. We hereby resubmit the article to your journal only. The revised manuscript has been reviewed and approved by co-authors. We hope the revised manuscript is now suitable for publication in your journal.

Thank you

Yours sincerely

Kerina Duri