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OPEN PEER REVIEW

Implementation of "Test and Treat" Strategy: Analysis of Deaths of People Living with HIV from 2017 to 2022 in Baise City, China

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

2 comments · 5 May 2024 – 6 May 2024

Referee 1 Reviewer

MINOR REVISION 5 May 2024

Dear Authors,
I appreciate your effort in conducting a study regarding the mortality of people living with HIV in China. In my opinion, the topic is novel, interesting, and within the journal's scope. The data were excellently analyzed, and the manuscript was well written. It is appropriate for publication. However, there are a few points that require revision to improve the manuscript. Please address my comments:
1-Abstract, last line of the method section, "Ox proportional hazards regression model": I think you mean "Cox regression". Please correct it.
2-Was this study conducted in Baise city or Guangxi province, as mentioned in the title? Please recheck it.
3-Please use MeSH terms as the keywords as much as possible.
4-Method, definition, AIDS-related death: please elucidate "AIDS-related specific diseases and syndromes". It is vague in the current format.
5- It seems that you collected the data based on the census method. If this is true, it should be mentioned in the method section. If not, please provide information regarding the sampling method and how to estimate the sample size.
6-Table 1, age of diagnosis, 15- 50-: I could not understand this; please recheck it.
7-Results, please provide model fitness indices for the Kaplan-Maier method and the Cox regression model.
Bests,

Referee 2 Reviewer

MINOR REVISION 6 May 2024

Hello
I reviewed your article with the title " Implementation of Test and Treat Strategy: Analysis of Deaths of People Living with HIV from 2017 to 2022 in Guangxi, China " with pleasure.
My point of view is as follows:
Considering the limited number of studies in the field of HIV infection, this article is valuable in my opinion.
In order to improve the study, it is recommended that the following items be considered:
According to the results of the study on the causes of mortality in this population, 83% of deaths are related to a history of tuberculosis infection. Therefore, the authors should clarify whether a history of tuberculosis infection means only a positive tuberculin skin test or IGRA (latent tuberculosis) or a history of active tuberculosis disease.
And the next point: Considering that all HIV patients are examined during the first visit (primary care) when they are diagnosed, did the people included in this study who are in the mortality group and have a positive TST or IGRA receive latent TB treatment for the appropriate period?
After the above points are addressed, this article is acceptable in my opinion.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Response to reviewers' Comments (ID145233)

Dear Reviewers,

Thank you very much for your valuable feedback on our manuscript. We have carefully considered your comments and have made the necessary revisions. Below are our detailed responses to your comments.

Reviewer 1:

1-Abstract, last line of method, "Ox proportional hazards regression model", I think you mean "Cox regression" please correct it.

Response: Sorry. This is indeed *"Cox regression"*, with one letter missing.

2-Was this study conducted in Baise city or Guangxi province as it mentioned in the title? Please recheck it.

Response: Sorry. I made a mistake when modifying the title. It should be Baise City. All the research in this paper is about Baise City. Administratively, Baise City belongs to Guangxi Province, but the paper does not have information about other cities in Guangxi, so it should be research on Baise City. The title should be revised to: Implementation of Test and Treat Strategy: Analysis of Deaths of People Living with HIV from 2017 to 2022 in Baise city, China

3-Please use MeSH terms as the keywords as much as possible.

Response:I removed "Baise City" and made some modifications as shown below:

Original--**Keywords:** AIDS; All-cause death; AIDS-related death; Antiviral treatmen

Modified--Keywords: AIDS; All- cause mortality; AIDS-related mortality; Antiretroviral therapy (ART)

Therefore, some of the expressions in the article have been revised accordingly.

4-Method, definition, AIDS-related death, please elucidate "AIDS-related specific diseases and syndromes" It is vague in the current

format.

Response: AIDS-related specific diseases and syndromes: HIV-Associated Dementia, Progressive Multifocal Leukoencephalopathy, Wasting Syndrome , Acute HIV Infection Syndrome , HIV-Associated Nephropathy, etc.

I have provided additional descriptions in the "Materials and Methods -- Definitions -- AIDS-related deaths" section.

5- It seems that you collected the data based on the census method. If it is true, it should be mentioned in the method section. If no, please provide information regarding sampling method and how to estimate the sample size.

Response: The data for this study were all derived from the China Information System for Disease Prevention Control -- AIDS Information System (AIDSIS). AIDSIS is a comprehensive information management platform used in China for the prevention and control of AIDS. Newly identified HIV-infected individuals need to be initially registered in AIDSIS. Infected individuals are required to undergo regular follow-ups, with detailed information from each follow-up recorded in AIDSIS.

The study subjects were all eligible people living with HIV (PLWH) obtained from the AIDSIS database. The selection criteria included those registered in the system from January 1, 2017, to June 30, 2022, who were aged 15 and above and residing in the Baise City area.

I have described the method of obtaining the study subjects in the Data Collection section.

6-Table 1, age of diagnosis, 15- 50-, I could not understand please recheck it.

Response: The expression has a flaw , and it should be represented as "15-<50 years" for ages 15 to just under 50, and "≥50 years" for ages 50 and above.I have corrected the errors in Table 1 and elsewhere.

7-Results, please provide model fitness indices for Kaplan-Maier method and Cox regression model.

Response: Thank you for your valuable comments on our manuscript. Indeed, I did not provide model fitness indices. The essence of the Kaplan-Meier curve lies in visually depicting the distribution of survival data and

comparing survival differences between different groups, without directly engaging in the quantification of model fit metrics. Its evaluation primarily relies on statistical tests such as the Log-rank test. As presented in the text, the results of such tests are given, for example, "There was a statistically significant distinction observed in the survival curves between patients who received treatment and those who did not within 1 year post-diagnosis, indicating that untreated patients faced a higher mortality risk compared to treated ones (χ^2=219.174, P<0.001)."

The supplementary results of the Cox regression model fitting are as follows: All-cause mortality model: Likelihood Ratio Test: Chi-square = 3672.254, P < 0.001, -2 Log Likelihood = 18587.034 , C Index=0.85; AIDS-related mortality model: Likelihood Ratio Test: Chi-square = 1515.83, P < 0.001; -2 Log Likelihood = 6259.827,C Index=0.89. Both models demonstrate good fit. I have added the fit indices in the footnote of Table 4.

Reviewer 2:

1. According to the results of the study on the cause of mortality in this population, 83% of the cause of death is related to the history of tuberculosis infection , therefore, it should be clarified by the respected authors, does the history of tuberculosis infection mean only a positive tuberculin skin test or IGRA(Latent tuberculosis) ?? Or a history of active tuberculosis disease?

Response : My carelessness led to a significant error; thank you to the reviewer for pointing it out. The group for "history of tuberculosis" was mislabeled. Among the PLWH, 17% had a history of tuberculosis, while 83% did not.

The tuberculosis cases referred to here are those that conform to the diagnostic standards, including both clinical diagnostic cases and confirmed cases. When diagnosing tuberculosis in HIV-infected individuals, they should meet the diagnostic criteria, which include both clinical and laboratory diagnoses. Positive tuberculin skin tests or IGRAs do not establish a tuberculosis diagnosis. In HIV-infected patients, these tests are typically not performed. Clinically diagnosed cases are based on chest

imaging and clinical presentation, or chest imaging and immunological results. Confirmed cases include sputum smear, sputum smear and imaging, or sputum smear and bacterial culture.

I have added a concise description of tuberculosis diagnosis in the footnote section of Table 1.

2. And the next point: Considering that all HIV patients are examined during the first visit (primary care) when they are diagnosed, are the people included in this study who are included in the mortality group and have a positive TST or IGRA, Have they received latent TB treatment for the appropriate period?

Response: Tuberculin Skin Test (TST) or Interferon-Gamma Release Assays (IGRA) being positive does not lead to a diagnosis of tuberculosis, and thus, these individuals would not receive tuberculosis treatment. Only when a HIV-infected individual has a clinical diagnosis or confirmed case of tuberculosis will they be given the relevant treatment for the disease.

We believe these revisions have improved the quality of our manuscript, and we hope it meets your expectations. Thank you again for your insightful comments.

2 Revision 1

0 comments

No public comments in this round.