Reviewer’s report

Title: Incidence, prevalence and associated factors of mother-to-child transmission of HIV, among children exposed to maternal HIV, in Belgaum district, Karnataka, India

Version: 0 Date: 25 Nov 2018

Reviewer: Amanuel Andegiorgish

Reviewer's report:

Thank you for the opportunity to review the manuscript: Incidence and associated factors of mother-to-child transmission of HIV in Belgaum district, Karnataka, India.

I have read this manuscript with great interest. Below are my specific comments to the authors:

Strengths and Weaknesses

Strength: …………… Better after revision of the comments from reviewers

Weakness: …………… Better after revision of the comments from reviewers

Overall the manuscript needs grammatical editing by native English speaker as well as who have knowledge about the topic.

Title

The title should and must be very specific. In your study you have used two things,

It implies overall child bearing mothers in Belgaum district. Suggestion "Incidence and associated factors of mother-to-child transmission of HIV, among …. in Belgaum district, Karnataka, India

In your title there is no point indicating prevalence, but you have added table of prevalence.

Abstract

Page 2, Line 50. All Belgaum resident pregnant women who tested HIV +Ve, were included. How representative this is to the population of study area? This is facility based list study and not considering home delivery.

Page 2 line 50 and page 7 line 57; the result in the abstract and the main text are different. One is starting with mothers and one with children. Better to start with main objective outcome.
Page 3, line 16. The risk of HIV transmission has significantly reduced if the mother or the baby has received Nevirapin after delivery, how strong, use OR?

Page 3, line 21. Your study highlighted that exclusive breastfeeding beyond 26 weeks is a risk for vertical transmission of HIV. How many samples were in exclusive breastfeeding post six months? How trustworthy is this to conclude considering your study design, sampling method and sample size? What further action do you recommend to confirm this?

Page 3, line 26-41. ...limiting exclusive breast feeding up to 26 weeks, among HIV infected mothers is critical to reduce incidence of paediatric HIV in India. How generalizable is this study to paediatric HIV in India?

Page 3, line 34. Key words; would be better to include prevalence, Nevirapin

Background

Page 4, line 6 the Abbreviation of HIV would be better if explained in the first statement and use HIV in the preceding.

Page 4, Line 6-11 and Line 18-23. No citation where this information is from.

List of Abrevations: not given for ARV.

Page 5 line 14-17, to examine the incidence, prevalence and role (increase HR) of associated factors. Is this role, qualitative or quantitative? How would you estimate it?

Page 5 line 19-21. You mentioned "Previous studies in India, were either confined to a single facility or assessed the risk among urban dwellers only" How could your prove your study is encompassing both urban and rural residence besides facility based?

Page 5 line 49-50. In reference to citation no 20, you have stated that in 2012, HIV sentinel surveillance data indicated HIV prevalence of 0.75% among ANC attendees and 0.21% among the PPTCT attendees. How comparable is your study findings with this result? And why such a big difference?

Page 6, Line 15-18( Recruitment of study subjects). A similar previous study was done among women in River State Nigeria. Why not you use that proportion for estimation of the variable of interest in your study?

Page 6. Line 32-34. Information on Date of HIV testing of mothers should come first of Date of start of ART.

DNA PCR and Antibody Tests were used to diagnose children with HIV. However, from HIV positive children who did not have antibody, further tests were needed using RNA.

The last test of Antibody testing was done at 18-24 months of age. Subjects recruited on May (end of study) will have 16 maximum months. How this is done?

What is the proportion of the studied pregnancy of all pregnancy in the study area?

Methodology

A cohort study was designed, how? Do you have control group?

What is the probability of overall pregnant women to come to the health facility for ANC and pregnancy women who have knew their HIV status prior to pregnancy to come for ANC?

Study subjects were recruited from 1st January 2011-31st May, 2013 and were followed un Nov 30, 2014. Those recruited on May 2013 will be followed only for 15 months?

Data Collection: No information regarding to data collectors as well as training related to the objective of the study.

Consent was sought from all the eligible women included in the final list would be better to bring in the ethical statement.

Why three different blood tests, and what is the criteria of classifying positive for HIV baby based on the outcome (if one, if two or all three positives).

How many mothers were excluded due to duplication and movement to other places? HIV+Ve people are more likely to change places from their origin.

In your abstract method, there is no information regarding censoring.

Only 454 babies were tested for HIV at least once. But your result in the abstract seems calculated from the "487 children followed up, the cumulative incidence rate by 24 months of age was 4.8 per 1000 person months" How?

Page 8, line 7-9: by the age of 24 months 38 babies were identified as HIV positive by the three tests. How many of them were exclusive breastfeed more than 26 months?

Page 8, line 7: you said 23 babies were not tested due to death, again in same page 8, line 14: 33 babies died, does not this contradict?
Page 8, line 14: the prevalence of HIV among died babies was 10%. Can we say the prevalence of death was higher among HIV positive babies? If it is, probably many children were dying before coming to health facility and HIV test?

Page 8, line 31-38: Mothers have started ART on different time schedule. Was it on the mother choice, decision by the health care professional or by the investigator?

Page 8, line 17-21. What is the relevance of stating time of death of the 33 died children in your result.

Page 8, line 38. Only 9% mothers initiated ART after the delivery. This should be 40 out of the total mothers of tested babies. Because at last we want to see how timing of ART initiation correlate with MTCT of HIV, which is our objective. The table need to be reconsidered again using these assumptions.

Page 8, line 45. Not around. One-third of the babies were not breastfed at all.

Page 9, 7-12…….. their HIV status prior to pregnancy, compared to mothers of their counterpart.

Page 9, line 32. Prevalence of HIV transmission in the study area. Commented for consideration of prevalence starting the title of the study. Justification needed regarding the relevance and strength of prevalence information in this report.

Page 9, line 45-47. Redundancy with line 33 above.

Page 9 line 57. You have mentioned >24 months breastfeeding and Naviparin has a strong risk factor for HIV transmission, and on page 10, line 2-10, Naviparin has reduced risk of HIV (AHR = 0.25 and 0.12) ?

Result

Your study is about Incidence and associated factors of mother-to-child transmission of HIV xxx district. And it is known that HIV transmission from mother to child is influenced by the CD4 count as well as Viral load of the mother, how did you try to control the potential confounding for your association study.

Table 1. Use same format like table 2 and 3, 2nd column number of children and 3rd column percent.

Table 2: How was the cumulative incidence rate calculated to handle censored information?

Page 8, line 1-5. We estimated the cumulative incidence rate (CIR) of MTCT per 1000 person months by age 24 months. We used survival analysis to include the lost to follow-up cases to estimate CIR and the results are presented in Table 2. Better to bring to the methodology section. (I think already mentioned so don't do redundancy).
Page 8, line 31-43. The first statement is about initiation of ART, and the second statement is who took Nevirapine and as prophylaxis. Are they different? If not reconsider the term "however",

Table format follow the BMC format

Page 10, line 14-17. and page 12, line 38-42. In your literature you have mentioned that cesarean section reduce risk of HIV 1-2%, but in your study not, discus why?

Page 10, line 38-52, this part of the discussion has not logical order with the main findings of your study. Discus in the discussion section not evaluate.

page 10 line 51- 52. What does it mean cohorts of babies gathered through a systematic approach? How does it apply with your study?

Page 11, line 9-12. The study identified two factors, breastfeeding and Nevirapine prophylaxis, to be associated significantly with the MTCT among HIV exposed children by the age of 24 months. I think the association is in different way, needs revision.

Page 11 line 52. How many children have received ART after delivery and were protected from MTCT?

Page 11 line 1-12. Is not your objective to compare, How can you suggest ARV should be changed by ART?

Page 13, Line 59. And page 14 line 1-7, are not your study objectives.

Reference :

Majority of the articles you have coted are old, it would be better to use latest reference to make easy for comparing the knowledge in practice. There are many updated information's like "BMC Infect Dis. 2018; 18: 216. doi: [10.1186/s12879-018-3126-5, PMCID: PMC5946547 PMID: 29747581]."

I have not seen a single reference similar to your topic. Is this because of uniqueness of your topic or not? Suggestion read this paper (THE LANCET * Vol 360 * August 3, 2002 * www.thelancet.com ) . All literature close similar to your study are old enough why?

No uniformly reported. Example Ref. No 13 and 12, 26 ,27 ; the name of authors to be listed should be similar.

Ref. No 29. This is not WHO guidelines of ART administration on CD4 count. Check it again.
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

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 recommend additional statistical review

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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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