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: 15 Nov 2018

Reviewer: Marta Andres Miguel

Reviewer's report:

This paper presents an interesting study on mother to child transmission (MTCT) of HIV in a district in India. The study analyses factors associated with MTCT, and concludes that extensive breastfeeding and Nevirapine treatment reduce MTCT in this setting. The topic covered is highly relevant, and the authors have done a great effort to collect data from urban and rural Indian health facilities and to present HIV MTCT situation in this setting. Therefore I recommend its publication after some changes are implemented.

Abstract:

Page 2 Line 9: What is it meant with cumulative prevalence rate?

Page 2 Line 16: Could you indicate the hazard ratio for Nevirapine administration compared to the other categories, as shown in line 14 for breastfeeding?

Background:

Page 3 Line 9: Please, include a reference for "3% of all new infections"

Page 4 Line 48-50: It is not clear to me where the difference between 0.75% HIV prevalence among ANC attendees and 0.21% among PPTCT attendees comes from. Are they different populations? Could you explain better?

Methods:

Page 5 Line 34: Please, be consistent in using "breastfeeding" or "breast feeding".

Page 5 Line 37: When was the questionnaire performed? If the questionnaire was performed at different times after delivery, this could lead to recall bias. When was the information about the
breastfeeding practice collected, as this cannot be collected after delivery? Please, provide more
detail about how was the information collected along the study.

Results:

Page 7 Line 11: When was the media age at which children tested HIV positive?

Page 7 Line 42: Would it be possible to show if under the category "either mother or baby were
given Nevirapine", it was the mother or the child who received the treatment? Does this have any
influence in the outcome variable?

Page 8 Line 7-16: It would be helpful if the authors present the values (cumulative incidence
rates) for the different categories in the text.

Page 8 Lines 31-47: In this paragraph, values (percent) are shown for some categories but not for
others. Please, be consistent. Also, it is not clear where HIV prevalence of 7.8% among exposed
babies comes from. It would be helpful if authors could show the numbers of HIV infected and
exposed babies for the different categories in the tables to facilitate understanding.

Page 9 Line 12: What about the age of the mother? This is also associated with MTCT risk.

Page 9 Line 19: "When controlled for other risk factors". This is always the case for multivariate
analysis and for the results presented in this paragraph, so I would delete this sentence.

Discussion:

Page 9 Line 43: I think that "during the year" and "between 2011 and 2013" might be redundant.
Or "during the years between 2011 and 2013".

Page 9 Line 57- Page 10 Line 7: The authors provide valuable information about the results in
other studies, but do not discuss where the differences in MTCT might come from. I think this
section would benefit from a brief discussion about these differences.

Page 10 Line 10: In Table 4, also the age of mother >30 is associated with MTCT, why do the
authors do not comment on this?

Page 11 Line 15: I would rather say "the present study showed a tendency of mother who started
ART more than 90 days prior to delivery to…" As the differences across the status of ART
initiation by mother are not significant.

Page 11 Line 43: As I understand from what the authors say in the background section, PPTCT
interventions in India changed in September 2012 with the introduction of triple drug ARV
regimen. As this change occurred during the study, it complicates the interpretation of the results
as the study population is not homogeneous. I think it should be listed as a limitation of the study.
and discussed as to how this might have influenced some of the results on the effect of ART initiation on MTCT.

Abbreviations:
Please, include ARV.

"ART" stays for anti-retroviral therapy.

Tables:
I think the tables would benefit from including the number of individuals in the numerator for each of the categories.

**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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