Reviewer’s report

Title: Seroprevalence and risk factors of herpes simplex virus type-2 infection among pregnant women in Northeast India.

Version: 2 Date: 3 June 2011

Reviewer: Christine Johnston

Reviewer’s report:

The authors have revised the paper substantially, making it much stronger. They have included additional important information on the demographics of the study population, highlighted the HIV/HSV-2 connection with more up-to-date references, and have built a multivariate model which more completely describes risk factors for the HSV-2 infection in northeastern India. Importantly, sexual risk taking behaviors (>1 sex partner, early age of first sex, and lack of condom use) were significantly associated with HSV-2 seropositivity, as has been found in multiple other populations throughout the world.

Minor essential revisions:
Please include the methods of building the multivariate model in the methods section, as you did in the response to reviewers section (“We used the Wald Backward elimination method with probability for stepwise entry at p=0.05 and removal at p=0.1”)

Minor discretionary revisions:
Paragraph 2 of the background is repetitive and could be more succinctly written. For instance, it is mentioned twice that HSV-2 doubles the risk of HIV acquisition. The final sentence of paragraph 2 could be disputed (“HIV-1 replication can be reduced with antiviral therapy directed solely at HSV-2.”) as acyclovir has been found to have anti-HIV activity in vitro ((1-3)).

The sentences in the final paragraph are not helpful to understanding the populations in the study-I think it is adequate to say that the states are very heterogeneous. I would consider excluding these sentences “Assam is the most populous northeastern state of India with a population of 31.11 million in 2011. Assam acts as a mixing cauldron for many ethno-cultural groups including convergence of Mongoloids and Caucasoid. Whereas the other four states has predominantly a uniform distribution of population mostly of local tribes”

Results:
In the results (page 10), you state: “However, due to confounding interactions (with State), there was loss of the significance on multivariate analysis.” Did you look for any interaction terms? If so, these may be described here.
Multivariate model: I think that age would still be best described as a continuous variable. The authors state that the categories were selected to result in equal distribution of people in each category. However, there are nearly twice as many women in the age 22-25 group as compared to the other groups. I do think that the seroprevalence of 10.5 (in 22-25 year olds) and 9.4 (in >29 year olds) is significantly different; the outlier is likely the 26-29 year old group. The abstract continues to state that there is a significant peak in the age 22-25 group, however, in the new multivariate model this is not the case. If you elect to keep age as a categorical variable, you could state in the abstract that HSV-2 seroprevalence increases with age (aOR=1.9 for 22-25 yr old, aOR=2.29 for >29 yr old).

Discussion, page 12: The statement: “Studies from United State reported 33% HSV-2 prevalence in inner-city communities.” seems irrelevant and could be removed. This population is not at all comparable to that found in NE India.

Table 2. Why are p-values listed for the reference groups?

References

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I DECLARE THAT I HAVE NO COMPETING INTERESTS