Reviewer's report

Title: A portrait of single and multiple HPV-type infections in Brazilian women of different age strata with squamous or glandular cervical lesions

Version: 2 Date: 9 October 2013

Reviewer: Alyssa Cornall

Reviewer's report:

Major Essential Revisions

1. The data presented in Table 1 seems out of place - I understand that both cytology and histology are being used to determine a reliable diagnosis but it is unclear how the association between the two was analysed to generate a final diagnosis or what was the exact purpose of comparing cytology to histology. Please describe clearly how the cytology data and the histology data were used and why this analysis was done. Since the main aim of this paper is to compare single- and multiple-HPV infections across different disease grades, if they cytology data did not contribute to the final diagnosis of disease for all patients, then the cytology data should be omitted from the study.

Minor Essential Revisions

2. When referring to the Alpha-9 and Alpha-7 "groups" of viruses, these should be referred to as "species" rather than "groups".

3. In the methods section under HPV-DNA Testing, the test used is obviously the Roche Linear Array HPV genotype assay and should be referred to as such and appropriately referenced by Manufacturer, City/State, Country. The reference for the PGMY primers is as follows, and I believe that references 14 and 15 are not appropriate.


4. In the methods section under HPV-DNA Testing, please clarify what you mean by repeated tests until the BG levels were satisfactory - did you re-extract and re-amplify the targets? What happened if you could not achieve a satisfactory result?

5. In the results section, does "final pathological diagnosis" equate to histopathological diagnosis or a composite diagnosis using both cytology and histology? Please clarify.

6. In Table 2, results should be further stratified into CIN1, CIN2 and CIN3+.
7. In Table 3, please provide a category for "Any Ir-HPV".

8. For the description of Table 4, please describe the results of statistical tests in the text.

9. Figure 1 is not described in the text and appears to contain the same data as Table 4, without the P-values. Please select either Table 4 or Figure 1 to include in the manuscript. If Figure 1 is selected, the Y-axis will need a title and units, and the colour for the glandular lesions will need to be made darker as it currently does not print well in black and white.

10. In the Discussion, first paragraph - given that the study contained only small numbers of glandular lesions, is the comparison to squamous lesions statistically significant? I think this requires analysis.

11. In the Discussion, third paragraph - describe how the prevalence of HPV types in women with squamous cervical lesions differs from that in women with normal cervixes.

12. I think the discussion requires more commentary on what the implications of single versus multiple infections might be - is there evidence to suggest it is biological or behavioural, and is there any evidence or theory on whether multiple infections are biologically more likely to result in high-grade lesions.

Discretionary revisions

13. In the Abstract, line 15, alpha-9 group is repeated unnecessarily.

**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.