Reviewer's report

Title: The impact of maternal HIV infection on cord blood lymphocyte subsets and cytokine profile in exposed non-infected newborns

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Reviewer: Thomas Scriba

Reviewer's report:

This study aimed to investigate at the effect of HIV infection in mothers on the B lymphocyte repertoire of uninfected, HIV-exposed infants. The authors compared the cytokine profile and B lymphocyte subsets in cord blood between HIV unexposed infants and HIV exposed infants. The authors report an increase in B lymphocytes in HIV-exposed newborns. They also report similar levels of cytokines between infants and their mothers with the exception of IFN-γ and TNF-γ.

Major Compulsory Revisions

The manuscript is poorly written and the data are not displayed or reported in a concise and clear manner. This makes it difficult to bring across the key messages of the study. For example, multiple data tables on B cell markers are presented, which could be condensed into 1 table. The listing of the correlation results in the text could also be summarized graphically or in tables. In general, the manuscript would be more clear if the rationale for the study and the various markers and cytokines measured are included. The study question(s) should be clearly defined and results addressing each question should be systematically discussed. Rigorous revision of the manuscript is also required to correct many grammatical, syntax and spelling errors. The equations for regression models should be included as supplementary information and not in the main text.

Smoking and drug use are clearly very important variables in this study, however, the small samples size precludes adjustment for these in a rigorous manner (e.g. 4 smokers). Either the rigorous inclusion/exclusion criteria should be applied to the mother-child pairs based on confounders such as smoking and drug use, or the authors should refrain from making strong statements about the effects of smoking and drug use on the results, as the sample sizes are insufficient to give reliable results.

The method of measuring lymphoproliferation, based on blasting cells, is very crude and subject to major variation. The limitations of this assay should be fully discussed. Furthermore flow cytometry raw data of these assays should be shown, ideally as supplementary figures.

Minor Essential Revisions

A number of tables are missing units (e.g. data in Tables 9 and 10). There is substantial duplication of cytokine level data in Table 9 and Figure 1 as well as
Table 10 and Figure 2. One of these sets should be removed. Inclusion of the total number of subjects in the tables would make the data clearer. Figure 2B is missing p values.

IL-2 and IL-12 levels are mentioned in the results, however these data are not shown anywhere. Either label these as not shown, or include these data in tables or figures.

Figures 1 and 2 are duplicated and should only be included once.

**Level of interest:** An article of importance in its field

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests