Reviewer's report

Title: Low CD1c+ myeloid dendritic cells counts correlated with a high risk of rapid disease progression during early HIV-1 infection

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Reviewer: Kellie N Smith

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In the manuscript entitled "Low CD1c+ myeloid dendritic cell counts correlated with a high risk of rapid disease progression during early HIV-1 infection" by Diao et al., the authors show that "rapid progression" is associated with lower CD1c+ mDC counts and lower markers of DC maturation. While the study presents a marginal addition to the body of knowledge surrounding HIV-1 infection and DC, the science is sound. I recommend the following revisions prior to publication:

Major Compulsory Revisions
1. Because a major finding of the study is that rapid progression is associated with lower mDC counts, lower maturation markers, and lower IL-12 production, representative flow cytometry plots for IL-12, CD86, and CD1c should be shown for RP vs. TP.

Minor Essential Revisions
1. In the Background, the authors do not clearly present a hypothesis or rationale for evaluating persons with rapid vs. typical progression. This should be introduced more clearly in the Background.
2. In line 120 of the Methods, the markers are all listed as FITC. Were the cells not stained for co-expression of all these markers? If not, the methods need to clarify that the cells were stained for single expression of these markers.
3. Lines 127-130 of the Methods need to include fluorochromes for all markers.
4. Lines 240-246 discuss the rationale behind lower CD1c+ mDC counts in persons with rapid progression, however none of these reasons explains the difference between RP and TP. Why doesn't the decline of CD1c+ mDC equally affect persons with RP and TP? Are mDC less likely to become infected in TP? Does HIV infection cause less CD1c downregulation in TP? Is rapid progression the cause of or the result of lower mDC counts?
5. Minor grammar modifications

Discretionary Revisions
1. Table 2 contains somewhat superfluous information with irrelevant statistics. This could be removed from the manuscript.
2. In the Discussion, the authors could elaborate on the implications of the study. I.e., should we implore different therapies in RP vs. TP? Should we treat RP with DC during early infection?

**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