Reviewer's report

Title: Influence of KIR genes and their HLA ligands in the pathogenesis of leprosy in a hyperendemic population of Rondonópolis, Southern Brazil

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Reviewer: Annemieke Geluk

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Review BMC Infectious Diseases
Influence of KIR genes and their HLA ligands in the pathogenesis of leprosy in a hyperendemic population of Rondonópolis, Southern Brazil

By Luciana Ribeiro Jarduli, et al.

The authors have investigated the association between KIR genes and the immunopathogenesis of leprosy and show that activating and inhibitory KIR genes may influence leprosy development in a highly endemic area in Brazil. It provides a concise overview of the distribution of KIR genes in patients and controls in this endemic area. Thus, it represent the second paper on this topic and contributes to the knowledge on the genetics of susceptibility of leprosy, in particular of HLA- and KIR genes.

In addition, the influence of gender on leprosy susceptibility is investigated as well.

The experimental set-up of the study is sound.

Major comments
• A weak part of the study is that it lack any functional data on the reactivity of NK cells towards M. leprae (antigens) in the different group of individuals, or e.g. FACs analysis of PBMC of the different groups.
• In general the text and Figure 1 mentions controls or healthy individuals but in the conclusion the authors mention healthy contacts of leprosy patients. The control group used should be named consistently.
• In Figure 2 indicate the significant differences (if any) by their p-value in the figure.

Minor comments
• Text should be checked for typos and some errors grammar
• afro-Brazilians is still shown highlighted and should read Afro-Brazilians
• Please use page and line numbering in manuscripts for review purposes.
• Should Whites be indicated as Caucasians (discussion)?
• Overall less females are included. Is the reduced number of females in the
patient group corrected for this?

- The discussion should be shortened and avoid repeats of the results section.

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

**Declaration of competing interests:**

I declare that I have no competing interests