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: William Berrington

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The paper “Influence of KIR genes and their HLA ligands in the pathogenesis of leprosy in a hyperendemic population of Rondonópolis, Southern Brazil” by Jarduli et al reports different frequencies of KIR genes in patients with leprosy compared to controls. In addition they report differences in frequencies of KIR genes when they are paired with their activating HLA pairs.

Major compulsory revisions: 1) My main concern with the paper is that while their may be some possible significant associations, I fear that many of these associations fail to approach significance after multiple comparisons are taken in consideration, and the authors make no mention of any corrections that have been done to control for such. The authors should address issues associated with multiple comparisons when wording whether an association is potentially significant or not. At minimum the authors should address the number of individual genes being examined and correct for these using either conservative Bonferroni technique or by another method if possible.

2) In addition since the technique does not determine homozygotes versus heterozygous KIR gene pairs, it is difficult to determine whether population admixture plays a role in the difference between the patient and control group, as analysis of hardy-weinberg equilibrium cannot be performed in the control group. While this is a limitation of the technique, this should be pointed out in the in a discussion section.

3) Last another limitation is that the authors do not replicate these findings in a separate cohort. They can, however, reference their previous paper as possible replication of their finding.

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests