Reviewer's report

Title: Parvovirus B19 infection and severe anaemia in Kenyan children: a retrospective case control study

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Reviewer: Giorgio Gallinella

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The paper by Wildig et al. investigates the proportion of severe anemia cases with signs of active B19 virus infection in children from a malaria-endemic area of Kenya. Unlike the situation in Papua New Guinea, described in an analogous paper, where a close association between B19 infection and anemia was found, B19 infection does not seem a common cause of anemia in Kenya. Furthermore, while P.falciparum infection was frequent, no association with B19 infection was found in patients presenting with severe anemia.

The experimental design is appropriate and data are sound. However, although the PCR employed is able to detect all B19 virus genotypes, the information on what B19 genotypes have been detected is missing. This information would particularly interesting in consideration of the regional distribution of genotype 3. Furthermore, what was the serological status of PCR+ samples in cases and controls?

Minor essential revisions:

1. In the background section, the statement that “rapid viral replication in the upper respiratory results in a high level viremia” is incorrect. A viral replication site in the upper respiratory has not been positively identified, while it is the intense viral replication in the erythroid progenitor cells in the bone marrow that results in the high viremia observed in the acute phase of infection. The statement should be revised.

2. Include information (if possible) on what B19 genotypes have been detected in PCR+ samples

3. Include information on the serological status of PCR+ patients (case/controls)

4. Exposition of data would take advantage from inclusion of tables showing the demographic characteristics of case/control population, and the association of parvovirus B19 IgM and polymerase chain reaction (PCR) positivity with severe anemia (as, for example, in ref. 9), while data in tab 1 could be shown in graph format.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
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