Reviewer's report

Title: Co-infection of human parvovirus B19 with Plasmodium falciparum contributes to malaria disease severity in Gabonese patients

Version: 2 Date: 13 May 2013

Reviewer: Kwabena Duedu

Reviewer's report:

Major Compulsory Revisions
The authors indicate that they matched severe malaria cases with mild malaria, however, the total number of severe malaria cases are more than the mild anaemia cases. The authors, thus will have to indicate how the extra severe cases were matched and what implications they will have on the statistics.

In the discussion, the authors make reference to a recent study (page 11, paragraph 2, line 1) which was reported in 1990 and compares with “two older studies” which were rather reported in 1999 and 1997. The isn’t clear. In the context of their discussions, there have been a number of current key related studies which their review and discussions don’t cover (e.g. Wildig et al 2010 BMC Infect Dis 10:88, Wildig et al 2006 J Infect Dis 194(2):146-15, Duedu et al 2013, Asian Pac J Trop Biomed. 3(2): 129–139). The authors base their key findings on B19V infection interfering with the clinical course of P. falciparum malaria. This has been demonstrated by a couple of studies already, hence, there should be a clear justification on what makes their study and approach original and different as well as what additional knowledge it adds.

Both B19V and malaria have seasonal prevalence which may not coincide (difficult for me to tell with respect to their study area). The authors refer descriptions of study subjects to older reports (1995 & 1998). Its is uncertain whether the current study was part of the original study that was reported earlier or the same study subjects were recruited in this current study. This has both ethical and methodological concerns. In the case of the later (which is unlikely) the subjects may have had persistent B19V infection. Persistent B19V infections are potential confounders and need to be dealt with. Its is well reported that most children would have gotten B19V infection by age 2 years. Table 1 indicates the age (mean I presume) of 44.9 and 44.23 months. Children of this age group would have had an exposure (possibility) and B19V infection may be that of persistent infection rather than active infection. Were children who may have lived through a previous B19V infection immune? B19V viral loads are high and indicative of active infection, hence, information on other patients who might be immune will be more enlightening.

In addition HIV leads to persistent B19V infection and could be a significant co-founder. Were the samples screened for HIV? This information would help to better understand the clinical course of infection better.
Severe malaria was defined as severe anaemia with other markers. It will be necessary to provide the reader with some data on the clinical outcomes of the patients. E.g. transfused or not, survived or died.

Another limitation of the study is lack of information on the type of anaemia. Since B19V is particularly associated with aplastic anaemia, it will be more informative to provide data on which type of anaemia was present.

The references should be updated to include key similar studies conducted in similar environments.

The title and abstract are a fair representation of the study.

The writing is clear and concise.

Minor corrections
Final editing should deal with references placed outside the full stop as well as other minor editorial work.

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

**Quality of written English:** Acceptable

**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