Reviewer's report

Title: Human immunodeficiency virus infection is a risk factor for cerebral malaria in children in Uganda: a case-control study

Version: 3 Date: 29 September 2010

Reviewer: Stephen Graham

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This paper addresses an important interaction, likely to be highly prevalent and still lacking in clear data in children.

Major comments.

An important potential confounder here is age. HIV prevalence falls significantly with advancing age in children up until around 14 years as most are infected perinatally - and survival is poor esp in first 5 years. Indeed, those with cerebral malaria are significantly younger than the comparison groups - as expected as cerebral malaria especially common around 2-4 years in endemic settings. Could the greater HIV prevalence in CM pateints simply reflect the age association? It is stated in methods that multivariate analysis was done for independent risk, but it is not clear to me whether HIV infection was an independent risk factor.

It is incorrect to conclude that HIV is associated with "development" of CM as this was not a longitudinal cohort study - rather with the clinical presentation of CM as it was cross-sectional.

What is the HIV prevalence in the subset of uncomplicated malaria or no malaria (n=166) that are less than 60 months of age compared to the 81 CMs of that age?

Are there any outcome data for CM cases? Is HIV associated with poor outcome?

Minor points:

First para of methods, fifth sentence: "Severe anaemia.....were taken as having cerebral malaria". I presume that they had coma as well? Please clarify.

Last three paragraphs of results could be better structured and presented. For example, mentions HIV staging and CD4, and then next sentence starts with "However,..." and talks about anaemia. One could assume the inference but better to present more clearly. The last few paras of results reads as if a bunch of sentences thrown together without logical flow.

A question mark after malaria in second para of discussion.

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.