Reviewer's report

Title: Factors associated with ultrasound-aided detection of suboptimal fetal growth in a malaria-endemic area in Papua New Guinea

Version: 2 Date: 8 January 2015

Reviewer: Vanessa Murphy

Reviewer's report:

This paper examines fetal growth restriction in a cohort of mothers in PNG, where malaria transmission occurs year round. The use of ultrasound measures of fetal growth was a novelty of this study, as ultrasound is not available in many low income countries and study settings.

Minor Essential Revisions:

Abstract:
The data demonstrated an improvement in fetal growth where intermittent preventative treatment for malaria was used. The conclusion states that maternal nutritional interventions could improve fetal growth. It may be more appropriate to state that malarial treatments may improve fetal growth, or that in additional to maternal nutritional interventions, treatment for malaria may improve fetal growth.

Introduction:
Page 5, line 117: A concluding sentence could be added to this paragraph, perhaps indicating that there is little information about malaria infection in pregnancy outside of Africa.
Page 5, line 122: It is not clear that “intermittent preventative treatment in pregnancy” is related to malaria treatment, so this should be added.

Materials and Methods:
Page 5, line 126: the word “their” should be added before “first prenatal visit”.
Page 5, line 128: LBW is said to be “common” (17%) in this area, but this data is unpublished. Is this necessary to include here? Can the rate of low birth weight be given from the data itself in the results section (in addition to SGA and low weight gain)?
Page 6, line 144: It is not clear to me what ITNs are – please provide a definition.

Results:
qPCR data (maternal blood) is not shown. Could this be included as a supplement? Did this data result in different diagnosis of malaria compared to the other methods used?
Could data on low birth weight (<2500 g) be presented?

Discussion:
A history of malaria infection was associated with an increased risk of SGA in an
unadjusted model but not in the adjusted model. Undernutrition and primigravidity did not appear to be modifying this relationship - could the authors suggest any other possible factors which contributed?

Page 11, line 280: potential confounders may not have been measured – can the authors expand on what these might be?

Table 1:
Infant sex percentages for male (46.4%) and female (46.5%) do not add up to 100. The female percentage appears to be incorrect.

Discretionary Revisions:
Data from this study was part of an RCT evaluating intermittent preventative treatment of malaria in pregnancy. Did the randomisation group make any difference to the occurrence of low birth weight/SGA/low fetal growth rate?

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.