Reviewer's report

Title: Possible increased malaria transmission and susceptibility to clinical malaria episodes following treatment of Plasmodium falciparum asymptomatic carriers: Results of a cluster-randomized study of community-wide screening and treatment

Version: 1 Date: 8 May 2013

Reviewer: Lorenz von Seidlein

Reviewer's report:

Review: Possible increased malaria transmission and susceptibility

Tiono and coworkers reported earlier this year that their systematic screening and treatment of asymptomatic carriers at the community level did not reduce clinical malaria incidence in the subsequent transmission season (Malaria Journal 2013). In the submitted paper they report on rebound malaria episodes after the study completion.

1. Is the question posed by the authors well defined?
No – the authors do not present a null hypothesis which can be either accepted or refuted.

2. Are the methods appropriate and well described?
No- the description of study methods is incomplete. The statistical methods for this study are not described. The authors refer to the earlier publication in the Malaria Journal. Critical methodological aspects are not described. Specifically do the authors describe individual patients after the completion of three rounds or do they describe findings on the cluster level? The authors refer at times to findings on a cluster level and then produce individual patient follow-up data (survival analysis).

3. Are the data sound?
No – the data are incomplete. The authors don’t provide data on the disposal of study participants (e.g. consort chart). Without being able to understand how many patients were included and could be followed it is not possible to judge the data quality. If the unit of statistical inference is the cluster the data should be presented by cluster. Finally entomological data were collected in a subgroup of 10 clusters and were apparently analysed with the cluster as unit of statistical inference. Which magnitude of difference between study arms was the study powered to detect?

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
No – there is no consort chart or equivalent. There are insufficient descriptions how the data were analysed.
5. Are the discussion and conclusions well balanced and adequately supported by the data?

No – In their earlier paper the authors showed that systematic screening and treating didn’t have the desired effect. In this paper the authors show that systematic screening and treatment causes a rebound, an increased risk of malaria episodes for people in the intervention arm without a tangible benefit. Most readers would conclude that systematic testing and treatment is dangerous for study participants and should not be recommended. The authors do not address this critical aspect.

6. Are limitations of the work clearly stated?

No- the authors refer to potential confounding but give no indications that they appreciate other limitations of their study. Without a complete description it is impossible to guess the limitations of the study.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

The references appear adequate.

8. Do the title and abstract accurately convey what has been found?

No – the title includes the word “possible”. The abstract fails to convey the limitations conveyed by the earlier use of the word “possible”.

9. Is the writing acceptable?

Besides the limitation described above the paper is well written. It may be worthwhile to add that several aspects of the figures and tables are incomplete. Table 1 doesn’t state why no statistical tests were calculated to compare the study arms. Figures 2, 3, 4 show survival analysis of individual patients. This approach may be inappropriate. Furthermore why show the same finding in 3 graphs? If the authors want to contrast the differences between age strata this could be done within one graph? If this is not important why show multiple graphs? Figure 9 is incomprehensible without a legend.

**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