Reviewer’s report

Title: The duration of chemoprophylaxis against malaria after treatment with artemesinate-amodiaquine and artemether-lumefantrine and the effects of pfmdr1 86Y and pfcr776T: a metaanalysis of individual patient data

Version: 0 Date: 28 Sep 2019

Reviewer: Joshua Yukich

Reviewer's report:

This is a well written manuscript describing an attempt to utilize pre-existing data from clinical trials of artemisinin combination therapies for the treatment of *Plasmodium falciparum* malaria to estimate the duration of time to re-infection and more importantly the duration of post treatment prophylaxis in varied african contexts.

The manuscript is generally appropriately written and contains the necessary detail in methods and results to describe the models and results. The methods appear to be appropriate to questions and the conclusions are well supported by the results.

I have only minor comments on this article, which are that the discussion could better address a few small points.

1) Given that the difference in prophylactic times and the implication for reinfection are significant and both dependent on EIR and prevalence of existing drug resistance mutations, is the choice of first line drug in most of sub-Saharan Africa currently taking full advantage of these differences in most places (ignoring other trade offs such as long term resistance development and cost) the authors could do more to address how their results sit with contemporary policy and practice.

2) How does DHA-Piperaquine fit into the first line drug choice spectrum, given that generic expectations of its prophylactic time are longer than either of these other drugs? Is the impact expected to be large enough relative to the two drugs studied here to be seriously considered.

3) Where informative priors are used (in several places) the authors could speak more explicitly to the dependence of their estimated values and impacts (as well as identifiability of any models/parameters) that are heavily dependent on these.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

Statement on potential review bias
Please complete a statement on potential review bias, considering the following questions:

1. Did you co-author any publication with an author of this manuscript in the last 5 years?
2. Are you currently or recently affiliated at the same institution as an author of this manuscript?

If you can answer no to all of the above, write 'I declare that I did not publish with these authors in the last 5 years and also meet the affiliation criteria’. If your reply is yes to any, please give details below.
I declare that I did not publish with these authors in the last 5 years and also meet the affiliation criteria.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.