Reviewer's report

Title: Severe imported falciparum malaria among adults requiring Intensive Care: a cohort study.

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Reviewer: Perry van Genderen

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This cohort study deals with severe imported falciparum malaria at an intensive care unit. The paper is well written but remains superficial in its analysis, especially in relation to detection of potentially new prognosticators. It should be considered more as a descriptive study in which the manifestations of severe malaria, its occurrence in time despite adequate treatment and outcome are described rather than an analytical study specifically designed to evaluate CAM and MSA scores. As is correctly stated by the authors: the value of CAM and MSA scores are not validated in non-immune populations but it should be made more clear that these scoring systems were primarily developed for triage purposes in resource poor settings with limited supportive care facilities. In a non-endemic malarious region with sufficient supportive care facilities, one could argue that an intensive care population of malaria patients (especially if the centre is also a referral hospital for severe malaria) is probably not the most ideal setting for evaluation of CAM and MSA scores since these patients were all already identified as having severe disease and were referred for optimal supportive care (a high or low CAM or MSA score would not have changed treatment policy). Although not clearly stated, I must assume that CAM and MSA scores were also calculated retrospectively.

A study detailing new prognosticators for ICU admission would be more appealing to infectiologist dealing with imported malaria, especially in regions where treatment of malaria is centralized and decisions on whether or not referral have to be made if CAM and MSA scores were evaluated prospectively and in a cohort of malaria patients with clinical features ranging from uncomplicated to severe disease and were truly used as tools to select patients for referral to ICU or not. In addition, with only 5 case-fatalities, a low discriminative power of CAM and MSA for death could already be envisioned.

Minor essential revisions

Methods section
*A definition of ARDS is lacking
*Definition of CAM and MSA scoring system is lacking
*Management: is it true that the severe patients were treated with either quinine or artesunate ONLY and that treatments were NOT consolidated by a following oral course of antimalarials (e.g. iv quinine combined or followed by doxycycline)
or iv artesunate followed by a full oral course of antimalarial?

*Management: how was the exchange transfusion done?

Results

The majority of the patients (103/124) were transferred from another centre. Were these patients already receiving adequate treatment or not?

Which findings on admission were included in the table: those from admission in the referring hospital or those from the referral hospital?

What if only the most severe malaria patients were referred to THD? These potential biases, including a referral bias, should be discussed in more detail.

*amount of immunity: what was entered in the logistic regression analysis? cerebral malaria, ARDS? AKI? or immunity?

Were the individual parameters of the CAM score and MSA score also tested in multivariate analysis or just the outcome of these scores (in chi-square analysis?)

Discussion

With regard to artesunate, I would suggest to add the reference: Malaria Journal 2012 March 31;11:102 (kreefteijer-vegter et al). Artesunate was given to a large group of non-immune patients with severe imported malaria.

I don't agree with the statement that all patients with malaria should be screened for HIV. The case finding was not done in all malaria patients but in a subset of patients with severe malaria. Most HIV infections were found in patients of African origin. However, I can imagine that the authors would rephrase the statement to HIV testing should be done in African patients with severe malaria.

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.