Title: Prevalence and risk factors for Plasmodium falciparum malaria in pregnant women attending antenatal clinic in Bobo-Dioulasso (Burkina Faso).

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Author's response to reviews: see over
Author's response to reviews

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Version: 3 Date: 6 August 2014
Author's response to reviews: see over
Reviewer's report

Title: Prevalence and risk factors for Plasmodium falciparum malaria in pregnant women attending antenatal clinic in Bobo-Dioulasso (Burkina Faso).

Version: 2 Date: 22 May 2014
Reviewer: Rose McGready

Reviewer's report:

This paper could be improved by exploring the data differently. The conclusions may also change.

Major comments

1. Burkina Faso has produced a significant number of publications on MiP which is great as the area has been neglected for too long. For those not local to the area it is difficult to synthesize the different groups/researchers and also the women sampled. I think a summary (perhaps a map) and a table with results of manuscripts from Burkina, area of the country, rural, peri-urban and urban, age and parity of the women, with prevalence of P.falciparum data and how it was measured (RCT/microscopy/PCR), IPTp-SP introduced (yes/no) would give a much better overview for readers than the currently ad hoc/selective referencing. This would make the manuscript more useful outside of Burkina Faso which is where the interest is currently focused because you will be able to demonstrate the significance of the detection method and pregnancy cohort to the epidemiology. Please add this table and be inclusive. You may limit the search to last 10-15 years because it is easier to appreciate if the table fits on one page.

Even if this table is a supplementary table it provides a full overview of the situation and allows you space for complete referencing. This will allow more clarity in the discussion about what we know of MiP in Burkina Faso.

We have now included this table as an additional file as the reviewer indicates. We described this additional file on page 20 and we provided the additional file.

2. The following sentence should be amended as a quick pubmed search reveals more than a few: “However, few epidemiological studies have been conducted after the implementation of IPTp-SP in Burkina Faso to investigate malaria prevalence (6,7).”

The sentence has been amended on page 3 as follow “Several epidemiological studies have been conducted in pregnancy before and after the implementation of IPTp-SP in Burkina Faso (5–17).”
Other studies to include have been copied to the end of these comments.

Done.

3. The sample includes an equal number of women from each trimester. As SP-IPTp is not recommended in first trimester it would be useful to:
   a. Explore the number who received it in trimester one
   b. Recalculate uptake for women in 2nd and 3rd trimester
   Done on page 16 (table 1).

4. Women who come early in pregnancy are often not the same demographically and socially as women who present late. For example: are teenagers under-represented in the first trimester data. The data in table one should be separated by trimester as well as presenting overall. Are there differences in your sample cohort as your study is cross-sectional which has inherent weaknesses in pregnancy which lasts for 9 months. These don’t prevent analysis or publication however the reader should be aware of them.
   Done on page 16 (table 1).

5. If women need to come to antenatal care to receive IPT-SP then the uptake also relates to the number of antenatal visits the woman has already had or at least the date of her first ANC attendance. A much more interesting number to present is how many visits has the woman had in 2nd/3rd trimester and how many doses of IPS-SP has she received. An effort should be made to retrieve the data of the first antenatal visit.
   We have now included an additional table for that purpose on page 17.

6. First antenatal visit is also a time when the chance to detect parasites is high – or because the woman has not yet accessed chemoprophylaxis or because she feels a bit unwell and so attends ANC. This needs to be controlled for.
   We have now included the number of ANC visits in our multivariate analysis model on page 19 as well as the use of ITN.

7. Season of first trimester can be created for the women and should also be controlled for in this analysis given the high seasonality of malarial transmission.
   We did not collect data concerning the season of first trimester. So no change is made.

8. Laboratory methods: what happened when there was discrepancy between the reading of the two malaria smears?
   We have now modified this section as follow “Parasite density was determined by counting asexual forms of the parasite per 200 leukocytes assuming 8,000 leukocytes/µL of blood. A slide was considered negative if no parasite was found after counting 500 leukocytes. All the
slides were double-checked blindly and for discrepant results a third consensus reading was performed.”

9. When formal schooling is so low, literacy is probably also low. How do women manage to know their LMP? Did the midwife assign LMP based on fundal height measurement? A comparison of fundal height and trimester would also be informative if you have that data. Widwives assigned the gestational age based on the LMP. LMP was assigned based on fundal height measurement for those pregnant women who did not remember exactly their LMP but we don’t have those data.

10. Wording is more accurate as follows: “Gestational age was calculated from the first day of bleeding of the last menstrual period.”

11. Consent: the numbers in each trimester are extremely accurate. If literacy is low how do women sign? Thumbprint.

We have modified the ethical considerations section as follow “The study was initially discussed with health authorities and community leaders to obtain their assent. This study was approved by the National Ethics Committee for health research, Ouagadougou Burkina Faso (number 2010-054). A written informed consent was obtained from all pregnant prior to their enrolment in the study. For illiterate pregnant women, the informed consent discussion process was witnessed by an impartial individual. In those cases, the informed consent form had been signed with a thumbprint.”

12. Study flow: Did you have a policy or replacing those who refused? How many were refused? This is important to understanding the accuracy of the results. It is important to know if the sampling is representative of the population which is not known without these numbers.

In data collection section we included the following sentence: “Only two pregnant women refused to participate to the study because their husband did not allow them to participate to the study.”

Those pregnant women has been replaced by two consenting women.

13. There is no mention of these in the results section: blood pressure, paleness of conjunctiva, level of the uterine fundus and fetal heart rate.

We have deleted those data from the data collection section as this was an error.
14. Is there any opportunity to link survey data with pregnancy outcome data? Which would significantly increase the importance of the results.

We did not collect concerning pregnancy outcome data. So no change is made.

15. Please confirm the dosing and duration of quinine for positive women.

We have now confirmed the dosing and duration of quinine for positive women in the ethical considerations section as follows: “All women with anaemia or positive for malaria have been treated orally with folic acid plus ferrous and quinine 300mg (24mg/day until 7 days), respectively.”

What is the country policy for pregnant women? Why is Coartem not used for treatment?

In Burkina Faso, until 2011, the pregnant women suffering from malaria were treated with quinine. But from 2012 the national guidelines include Arthemeter + Lumefantrine or Artesunate plus Amodiaquine only after the first trimester.

16. There is a high rate of peripheral parasitaemia. What implications does this have for intermittent screening and treatment? While PCR has not been done (this could be included as a limitation of the work) how do you think the level of infection would be if it had been performed. Please add to the discussion.

Change made as indicated by the reviewer on page 8.

17. The rate of SP-IPT is way off expected uptake (this may look different with re-analysis of your data by trimester). This should be emphasized and the following article referenced (freely available). Coverage of malaria protection in pregnant women in sub-Saharan Africa: a synthesis and analysis of national survey data.


This article has been cited in the discussion section on page 9 and referenced at the reference section.

18. How can SP be efficient if uptake falls well below target?

This has been discussed on page 9.

Minor comments

1. Introduction, First sentence: Delete ‘s’ from millions
Done.
2. Parasitaemia – decimal place is not needed
Done.
3. Sometimes a comma and is used in place of decimal e.g. results (P < 0.001).
Done.
4. Table 3 Replace “ans” with “years”
Done.

Additional references:


Intermittent preventive treatment of malaria with sulphadoxine-pyrimethamine during pregnancy in Burkina Faso: effect of adding a third dose to the standard two-dose regimen on


Articles have been referenced as indicated by the reviewer.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

Some language corrections have been made.

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.