Reviewer's report

Title: Imported Pediatric Malaria at the Hospital for Sick Children, Toronto Canada: A 16 Year Review

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Reviewer: Julie Gutman

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The authors have presented a descriptive summary of 107 cases of malaria presenting to their hospital over a 16 year period. While this is useful to highlight the continued need for clinicians to consider malaria in their differential diagnosis, none of the information presented is particularly new.

Major compulsory revisions:

Lines 87-90: “Children account for 15-20% of imported malaria cases and present distinctly from adults with malaria. (8, 12) Importantly, children have different clinical presentations, are more likely to be non-immune, and as a result are at higher risk of developing severe disease and have an increased likelihood of death compared to adults.” Neither children nor adults who have lived all their lives, or even for the past several years, in a non-endemic area will have appreciable immunity to malaria.

Appropriate prophylaxis for the region of travel was prescribed in 6 (27%) of cases, only in one case was it documented the child adhered to the medication as directed. Was adherence not documented in the other cases (meaning that they might have been adherent) or was it documented that they were non-adherent (as suggested by the table)? This is not very clear although it is mentioned multiple times in the paper, and the authors should clarify in how many case it was documented that the adherence was not complete.

Figure 1- how can there be so many weeks from departure to arrival? I don’t find this graphic particularly helpful- what point are you trying to emphasize?

Please explicitly provide the sensitivity and specificity of BINAX now in your test population. In addition, as you have comparative microscopy data, it would be interesting to make some comparisons of the BINAX positive vs negative tests, which would be informative for clinicians.

In your discussion you seem to make an argument for routine screening of immigrants/refugees for malaria. Although 2/3 of your cases occurred in refugees/immigrants, as you have no data on the denominator of refugees/immigrants you can make no statement about what proportion of refugees/immigrants develop malaria shortly after arrival. There is no recommended test for “screening” of an asymptomatic person; even if an immigrant had a negative blood smear on arrival, this would not rule out the later development/appearance
of malaria.

Although you have 16 years’ worth of data, other than noting a difference in treatment regimen prior to and after 2001, you have not made any attempt to describe whether there have been improvements (or not) in diagnosis and management of malaria, which would hopefully occur as physicians become aware of the need to investigate for malaria. In addition, there is no attempt to describe whether the cases have been spread out roughly evenly over the years, or whether there has been an increase/ decrease in annual cases.

While the data on country of acquisition is interesting, it may be that this reflects the areas where Torontans are travelling more than the actual risk of acquiring malaria in these particular areas. For example, the risk of acquiring malaria in Guyana is quite low, particularly compared to sub-saharan Africa, however, there were 3 cases from Guyana and 3 each from Tanzania, Cameroon, and DRC. It would be helpful if any background on the population could be given which would help put this in perspective (ie, if for example there is a huge population from Guyana so many more people travelling there).

Although 25% of patient presented with severe malaria, there is no real attempt to determine if this was a result of longer delays to seek treatment, or other risk factors for severe disease which might be instructive to clinicians.

You note: “Our chart review includes 17 additional cases to those reported as being seen by SickKids in the Canadian Institute for Health Information (CIHI) database.” Does this mean that the hospital failed to report 17 cases? Please clarify what is the purpose of this statement.

The discussion notes “According to the CIHI database, between 2002-2012 there were 242 cases of pediatric malaria in the province of Ontario (61% of all Canadian cases), of which 23% were seen at our institution.” This would make more sense in the intro/ background than as part of the discussion.

Minor essential revisions

No child had anemia (hct <15%, hgb < 50 mg/dL) in the WHO criteria for severe malaria. This degree of anemia is severe, any anemia is considered Hb <11. This must be made clear/ corrected.

Discretionary revisions

This might be better documented graphically: “Forty-six (43%) cases had parasitemia of =<0.1%. Of those with parasitemia >0.1%, the median parasitemia was 1% (IQR 0.4 – 5).”

Lines 131 to 140 include a long list of definitions of different status of patients, however, these are mostly not used subsequently and are therefore not needed. This could be shortened to only what is subsequently used.
Level of interest: An article of limited interest

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

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