

Review of: "Misdiagnosis of Dengue Fever as Malaria and Typhoid Fever and Their Co-infection in Rural Areas of Southwest Nigeria"

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Potential competing interests: No potential competing interests to declare.

Against the backdrop of endemicity and similarity in symptomatology of malaria, typhoid, and dengue, the authors set out to "investigate the frequency of co-occurrence of dengue, malaria, and typhoid fevers in rural communities in Southwest Nigeria, as well as the possible misdiagnosis of dengue fever for malaria and/or typhoid fever".

The authors collected samples from patients attending rural health facilities in the Southwest zone of Nigeria and tested the samples for malaria and typhoid. They also subjected the positive samples to a dengue test. The study is relevant with a potential to contribute positively to the body of scientific knowledge and create an evidence-based awareness of a neglected and emerging tropical disease (dengue).

Review Comments

Abstract

Abstract - Background

Objective of the study not clearly stated in the abstract

The phrase (last line of background) should read "...because of their co-occurrence in some (instead of many) cases and the same location."

It would have been nice to also test the malaria and typhoid negative samples, as some are likely to be positive for dengue, to show evidence of burden and need for routine testing introduction.

Abstract – Conclusion

The recommendation that reads, "...hence it is recommended to include DENV screening in routine hospital tests, especially in cases of malaria and typhoid negative by rapid diagnostic testing," would have been more valid if the authors had tested the negative samples. Conclusions must be derived from methods and results, and so it would not be logical for the authors to make a recommendation that is based on the study they did not carry out.

Introduction

Paragraph 2, line 7

The phrase “Among the parasites known to transmit malaria...” should read ...to cause malaria...” not transmit. It is the female Anopheles mosquito that transmits malaria.

Methods

Study design

The authors could be clearer in describing the study methods.

What states and local government areas/districts in the Southwest were studied? Which health facilities were selected and how many? What was the spread? What sampling methods were used to select the facilities? The Southwest of Nigeria is large, consisting of 6 states and 137 districts/local government areas. More details need to be provided.

The particular year(s) of study were not stated. What year was the study conducted? This helps other researchers wishing to cite the study to put it in proper perspective while comparing the results with other studies.

The authors wrote, “Samples were collected from the month of October to the end of September of the preceding year.” Did they mean the following year? It would not be the preceding year? Why are they avoiding to mention the year, like October 2022 to September 2023?

Inclusion criteria

“...out-patients who reported to health facilities for malaria and typhoid fever...” Patients do not report to facilities for malaria or typhoid, etc., but for symptoms. Need to rephrase this to say those reporting to participating facilities for fever with a clinical diagnosis of malaria and typhoid...

“All samples tested must have been clinically confirmed by a clinician following lab diagnosis.” This statement is not clear. Did they first go for a lab investigation before seeing the doctor?

Sample collection

“...collected from patients...seeking malaria and/or typhoid diagnosis...” Again, this statement is not clear. Patients do not go to hospitals to seek a particular diagnosis; rather, they present with their symptoms seeking total care/disease management, especially treatment of their ailments, which of course would require clinical assessment and relevant laboratory investigations. Kindly rephrase this, please.

“...from Oct to September in the year sampled...” What year was that?

Misdiagnosis

“A total of 54 DENV-positive samples were wrongly diagnosed as malaria parasites...” Is this referring to the doctor’s diagnosis or the lab result?

What informed the age grouping? You did not state the age group of the study. Did you study all ages – children and adults? Why did you start from 15 years of age? What informed the age group interval of 6 years instead of 5 years?

Discussion

You started your discussion with study limitations; it would be nice to keep your limitations at the end after discussing your results.

“The limitation in this study is that the period of onset of illness was not assessed...”, Did you collect clinical data at all from the enrolled patients?

“Another limitation in this study is that results were not compared with data from other countries; however, this remains as an area for further research.” Why would the authors not compare their results with those of other countries? And why keep it for another research? It is not late to do this. This is not a limitation but a serious omission in the Discussion. I recommend that they go back to improve their discussion.