



International Journal of Research in Pharmaceutical and Nano Sciences

Journal homepage: www.ijrpns.com



PREVALENCE OF VIVAX MALARIA AMONG SELECTED GROUP OF CHILDREN AGED BELOW 5 YEARS OLD, ALNOHOOD TOWN, WESTERN KORDOFAN, SUDAN, SEPTEMBER 2017

Mosab N M Hamad^{*1} and Ammar Y M E Hassan²

¹Parasitology and Medical Entomology Department, Medical Laboratory Department Faculty of Health Sciences, Elsheikh Abdallah Elbadri University, Sudan.

²Microbiology Department, Faculty of Medical Laboratory Sciences, National University, Sudan.

ABSTRACT

Background: Plasmodium vivax is a protozoal parasite and a human pathogen. The most frequent and widely distributed cause of recurring (Benign tertian) malaria, P. vivax is one of the six species of malaria parasites that commonly infect humans. **Justification:** Vivax malaria is usually associated with severe symptoms in children under 5 years that may lead to severe complications. **Objectives:** To know the prevalence of P.vivax among the selected group of children in Alnohood, western kordofan state. **Methodology:** Blood specimens were collected from 80 children and examined by parasitological and Immunochromatographic techniques. **Result:** 3.75% of participants were positive for vivax malaria. **Conclusion:** They study showed low prevalence of vivax malaria in Alnohood town, western Kordofan state. **Recommendations:** Another studies should be conducted with large sample size. **Acknowledgement:** Many thanks to the families of all participants in this study.

KEYWORDS

Plasmodium vivax, Children under 5yrs, Western Kordofan and Sudan.

Author for Correspondence:

Mosab N M Hamad,
Parasitology and Medical Entomology Department,
Medical Laboratory Department Faculty of Health
Sciences,
Elsheikh Abdallah Elbadri University, Sudan.
Email: musab.noor13@gmail.com

INTRODUCTION

Malaria is a mosquito-borne disease caused by a parasite. People with malaria often experience fever, chills, and flu-like illness. Left untreated, they may develop severe complications and die. In 2015 an estimated 212 million cases of malaria occurred worldwide and 429,000 people died, mostly children in the African Region¹.

Children under 5 years of age are one of most vulnerable groups affected by malaria. There were an estimated 429 000 malaria deaths around the world in 2015, of which an estimated 303 000 (70.6%) were in children under 5 years of age².

Protozoa of the genus Plasmodium are the causative agent of malaria. There are four primary species of Plasmodium which are infectious to humans: *P. falciparum*, *P. malariae*, *P. ovale*, and *P. vivax*; however, a fifth species, *P. knowlesi*, has been reported to infect humans as well³.

Plasmodium vivax is a protozoal parasite and a human pathogen. The most frequent and widely distributed cause of recurring (Benign tertian) malaria, *P. vivax* is one of the six species of malaria parasites that commonly infect humans. It is less virulent than *Plasmodium falciparum*, the deadliest of the six, but *vivax* malaria can lead to severe disease and death due to splenomegaly (a pathologically enlarged spleen). It afflicted as many as eight U.S. presidents—including George Washington and Abraham Lincoln—and may have helped kill Genghis Khan. *P. vivax* is carried by the female Anopheles mosquito, since it is only the female of the species that bite⁴.

Plasmodium vivax is the most widespread human malaria, putting 2.5 billion people at risk of infection. Its unique biological and epidemiological characteristics pose challenges to control strategies that have been principally targeted against *Plasmodium falciparum*. Unlike *P. falciparum*, *P. vivax* infections have typically low blood-stage parasitemia with gametocytes emerging before illness manifests, and dormant liver stages causing relapses. These traits affect both its geographic distribution and transmission patterns. Asymptomatic infections, high-risk groups, and resulting case burdens are described in this review. Despite relatively low prevalence measurements and parasitemia levels, along with high proportions of asymptomatic cases, this parasite is not benign. *Plasmodium vivax* can be associated with severe and even fatal illness. Spreading resistance to chloroquine against the acute attack, and the operational inadequacy of primaquine against the

multiple attacks of relapse, exacerbates the risk of poor outcomes among the tens of millions suffering from infection each year. Without strategies accounting for these *P. vivax*-specific characteristics, progress toward elimination of endemic malaria transmission will be substantially impeded⁵.

Justification

Vivax malaria is usually associated with severe symptoms in children under 5 years that may lead to severe complications.

Objectives

To know the prevalence of *P.vivax* among the selected group of children in Alnohood, western kordofan state.

MATERIAL AND METHODS

Study design: descriptive cross sectional study

Study area: Alnohood town

Sample size: 80

Inclusion criteria: child under 5 year's resident in Alnohood town.

Exclusion criteria: child over 5 years or child resident out of Alnohood town.

Ethical consideration: parents were informed about the objectives of the study and they were consent.

METHODOLOGIES

Blood specimen was collected from each participant and examined for *vivax* malaria both Giemsa stained thin, thick blood films and antigenic based Immunochromatographic test were applied.

RESULT

3.75% of participants were positive for *vivax* malaria.

RECOMMENDATION

Another studies should be conducted with large sample size.

CONCLUSION

They study showed low prevalence of *vivax* malaria in Alnohood town, western Kordofan state.

ACKNOWLEDGEMENT

Many thanks to the families of all participants in this study.

CONFLICT OF INTEREST

We declare that we have no conflict of interest.

REFERENCES

1. <https://www.cdc.gov/malaria/>.
2. http://www.who.int/malaria/areas/high_risk_groups/children/en/.
3. <http://www.austincc.edu/microbio/2421c/mal1.htm>.
4. <http://scientistsagainstmalaria.net/parasite/plasmodium-vivax>.
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5198891/>.

Please cite this article in press as: Mosab N M Hamad and Ammar Y M E Hassan. Prevalence of vivax malaria among selected group of children aged below 5 years old, Alnohood town, western kordofan, Sudan, September 2017, *International Journal of Research in Pharmaceutical and Nano Sciences*, 6(5), 2017, 247-249.