



Malaria parasitaemia in children presenting with fever in Effurun, Nigeria

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Publication History

Received: 29 December 2015

Accepted: 04 February 2016

Published: 1 March 2016

Citation

Blessing O Okperi, Okiroro Ighosewe. Malaria parasitaemia in children presenting with fever in Effurun, Nigeria. *Medical Science*, 2016, 20(78), 53-55

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General Note



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ABSTRACT

Background: Malaria is the greatest cause of childhood mortality in Sub-Saharan Africa. The commonest presentation of uncomplicated malaria is fever. However all childhood fevers are not due to malaria.

Objective: To determine what proportion of children presenting with fevers have actual malaria parasitaemia.

Materials and Methods: A prospective study was on 1,096 children presenting with fever to the Rapha Specialist Children & General Clinic, Effurun, Nigeria. All these children are from birth – 18 years had their blood film (thin and thick film) done for malaria parasite identification and parasite density.

Result: The result shows that the males had 470 (76.9%) positive for malaria parasite.

Conclusion: The high malaria parasitaemia clearly indicates that malaria is obviously the leading cause of childhood fever in this part of the world. It is recommended that in every rural hospitals which may not be equipped with competent laboratory facilities and personnel the empirical use of antimalarial in children presenting with fever is justified if a cause is not obvious.

1. INTRODUCTION

Malaria occurs throughout the tropical world and remains one of the most prevalent diseases because climatic factors and human behavior provide conditions for parasite transmission throughout the year.^{1,2} It is caused by a bite of infected female anopheles mosquito inoculating the parasite plasmodium. Four species are recognized: *P. Falciparum*, *P. Vivax*, *P. Ovale* and *P. Malariae*.^{3,4} *P. Falciparum* is by far the commonest specie in Nigeria and the most virulent.

In 2006 there were estimated to be 189-327 million clinical cases of malaria (91% in sub-Saharan Africa) resulting in 881,000 deaths, 85% in children under 5 years. WHO reports that in 2006, only 23% of children and 27% of pregnant women slept under a bednet and only 3% of children in need of atemisinin combination therapy had access to it.⁵ In Gambia, Malaria was found to be responsible for 40% of episode of fever in children.⁶ Certain disease conditions increases susceptibility to malaria. In north central Nigeria, malaria parasitaemia was present in 91.1% of malnourished children and 13.3% of well nourished children.⁷ Malaria parasitaemia was documented in 9% of children with sickle cell anaemia and 29% of controls.⁸ 40% parasitaemia was found in primary school children in Ebonyi state, Southeastern Nigeria.⁹ Malaria symptoms are not always present whenever there is parasitaemia. 2% of all episodes of detectable parasitaemia was accompanied by symptoms of acute malaria in a certain study.¹⁰

The laboratory diagnosis of malaria include microscopy of thin and thick blood film for parasite identification and parasite density respectively. The parasite density could then be reported as follows¹¹ ;

- + 1-10 parasites/100 thick film fields.
- ++ 11-100 parasites/100 thick film fields.
- +++ 1-10 parasites/one thick film field.
- ++++ 11-100 parasites/one thick film field.

Symptoms of malaria are usually not pathognomonic including fever is the commonest but may also include other symptoms in children including vomiting, diarrhea, poor appetite, prostration among other non-severe complication symptoms. Other common causes of fever in children include acute respiratory infection (ARI), Urinary tract infection, other viral and bacterial infections.

2. MATERIALS & METHODS

A prospective study of all children from birth – 18 years of age presenting with fever was done at the Rapha Specialist Children and General Clinic, Effurun, Delta State of Nigeria. The clinic is a private health institution that city of Effurun. The children who presented with fever all had their peripheral blood smear done by thick and thin film after appropriate staining with Giemsa stain by a certified medical laboratory scientist. All the children were all under 18years of age. Their sexes were recorded and the result of the microscopy compiled.

3. RESULT

Table 1 Result of malaria parasitaemia in 1,096 children with fever

Sex	Scanty	+	++	+++	Negative
Male	305	150	15	-	141
Female	237	84	11	-	153
Total	542	234	26	-	294
Percentage	49%	21.4%	2.4%		26.8%

The result shows 55.7% male, 44.3% female. Scanty parasitaemia was obtained in 49.5% (male 27.8%, female 21.6%). One plus was found in 21.4% (male 13.7%, female 7.7%), Two plusses was found in 2.4% (male 1.4%, female 1%). There was no parasitaemia in 26.8% (male 12.8% female 14%).

4. DISCUSSION

The result showed that 73.2% of children with fever had malaria parasite in their blood. Malaria is one disease which is difficult to prove because not all fevers are due to malaria and malaria could co-exist with other causes of fever. Asymptomatic malaria parasitaemia of up to 65% has been documented in a certain study.⁶ However the high parasitaemia in children with fever is quite significant. That 26.8% of children with fever didn't have malaria parasitaemia reiterates the need for doctors caring for children to always look beyond malaria for other common causes like tonsillitis, otitis

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media and urinary tract infection when children presents with fever. Majority of the parasitaemia was Scanty and one plus parasite density. Only 2.4% had two plus density. There was no massive parasitaemia. This is not surprising as Effurun is a malaria holoendemic area with expected herd immunity to malaria hence the absence of heavy parasitaemia.

5. CONCLUSION

The high percentage of malaria parasitaemia in children presenting with fever suggest that malaria is still the commonest cause of fever in children in this tropical region. In rural clinical settings where there are no laboratories, it is probably safe to prescribe anti malaria drugs in the blind treatment of children in this region presenting with fever at least as an adjunct to other drugs like antibiotics when there is another obvious cause of the fever e.g a nidus of bacteria infection.

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