



Malaria Prevalence in Children under 5 Years and Pregnant Women Attending Selected Hospitals in Ihitte Uboma LGA, Imo State, Nigeria

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Abstract

The study was carried out to determine the prevalence of malaria among children under 5 years and pregnant women in Ihitte Uboma Local Government Area, Imo State, South Eastern, Nigeria. A total number of 200 blood samples were collected which comprised of 100 from pregnant women and 100 from children under 5 years. These were screened for presence of malaria infection using the thick and thin Giemsa stained blood films. Out of the four species of *Plasmodium*, only one: *Plasmodium falciparum* was identified to be most predominant in both sample populations. Results obtained showed that all the blood samples obtained from the pregnant women were positive for the parasite with the age groups of 19-21 and 28-30 producing the highest significant signs, with visible fever accompanying the infection. Similarly all the blood samples obtained from the infants were positive with all the studied age groups displaying a high level of significance of (+++) and the associated fever. Malaria infection indeed showed a high level of endemicity in Ihitte Uboma thus calling for adequate measures to be put in place to monitor its negative impact on these most vulnerable members of the community, namely, pregnant women and children.

Keywords: Amakohia, Ihitte Uboma, malaria, children, pregnant women, *Plasmodium falciparum*, Nigeria.

Introduction

Malaria illness imposes great burden on the society as it has adverse effects on the physical, mental and social well being of the people as well as on the economic development of countries endemic for the disease. Malaria disease in humans is caused by *Plasmodium* parasites that are spread by female mosquitoes of the genus *Anopheles*. Its common symptoms include headache, weakness, fever, aches and pains, high body temperature (chills and rigors), and bitterness of mouth and loss of appetite. In children, additional symptoms include more than normal sleeping, nausea and vomiting. Malaria is a serious disease affecting children and adults but its consequences are more severe among children and pregnant women [1].

Nigeria is known for high prevalence of malaria [2] which is a leading cause of morbidity and mortality in the country [3]. Available records show that at least 50 per cent of the population of Nigeria suffers from at least one episode of malaria each year [4] with estimated cases in 2000 alone reported to be 2.4 million [3]. In view of this, it could be said that malaria imposes a great burden on the country in terms of pains and trauma suffered by its victims as well as losses in outputs and cost of treatments [5].

With Africa's largest population (estimated at 120 million), Nigeria bears a greater malaria burden than any other country in the world with an infant and an under-five mortality rate of 110/1,000, and 183/1,000 respectively [6]. High level of malaria endemicity, parasite resistance to

affordable drugs, and inadequate access to treatment facilities has contributed to making the disease the leading killer of children, accounting for an estimated 300,000 deaths each year. Similarly, many researchers have reported high prevalence rates of malaria in pregnancy in different parts of the country, ranging from 19.7% to 72.0% [7] with anemia, pregnancy miscarriages and low birth weight of babies identified as the most debilitating effects of the disease which account for 11% of maternal deaths in the country [8]. Furthermore malaria is said to be responsible for about 66 per cent of all clinic visits in Nigeria [9, 10] and it is worth noting that the morbidity and mortality of the disease has significant socioeconomic implications in the country especially in rural areas where poor living conditions and poor healthcare facilities militate against strategies adopted to adequately cope with the tremendous burden of the disease [11].

Malaria is holoendemic in Nigeria, with *Plasmodium falciparum* accounting for ninety five percent of all the infections in the country and *P. malariae* accounting for the remaining five percent [12]. Owing to the deadly form of the disease due to *P. falciparum* in the country, we studied the prevalence rates of the disease in pregnant women and infants attending selected hospitals in Ihitte Uboma L.G.A., Imo State, South Eastern Nigeria.

Methodology

Study Site and Population

This study was carried out in Amakohia community in Ihitte/Uboma Local Government Area (LGA) of Imo State, South Eastern Nigeria. The headquarters of the LGA is Isinweke, which has an area of 104 km² and a population of 120,744 at the 2006 census [13]. Most of the residents of the LGA are predominantly farmers, traders and civil servants. The presence of Oturugo and Nwangele Rivers nearly encircled the town and the adjoining towns. The presence of these rivers with their water-logged banks serves as potential mosquito breeding sites, and the continued interaction with these water bodies by the inhabitants in normal daily activities and chores makes the area potentially endemic for mosquito and other water associated parasitic infections.

The study population included 200 indigenes of Amakohia community selected at random. These were composed of 100 infants (50 males and 50 females) and 100 pregnant women. The purpose of the study was fully explained to them and their community leaders and their informed consents obtained before blood samples were collected from them. Samples were collected from healthy volunteers and those observed to be visibly sick of the parasitic infection (malaria).

Sample collection and parasitological screening

3ml of venous blood sample was collected from each of the 200 volunteers using 5ml syringe. The samples were then transferred into fresh EDTA bottles, labeled with code numbers, age and sex (for infants only) of the volunteers, and taken immediately to the laboratory for screening and identification of malaria parasites. The screening was done using Giemsa-stained thick and thin blood films as recommended by WHO [14]. The films were examined using the 100x oil immersion objective [14]. Sample collection and screening was done from March to August 2010.

Results

All the 200 blood samples randomly collected and screened were positive for malaria parasite. Using species characteristics, only *P. falciparum* was identified (Table 1).

Table 1: Identification of Plasmodium in blood samples of volunteers in Ihitte Uboma L.G.A., Imo State

Blood Film	Trophozoite	Schizont	Gametocyte	Confirmed Organism
Thick Film	Single and double chromatin dots, comma, and ring forms visible	Not seen	Crescent shaped	<i>Plasmodium falciparum</i>
Thin Film	Normal host RBC, marginal foriis seen at the edge of RBC, single and double chromatin dots visible	Not seen	Crescent shaped	<i>Plasmodium falciparum</i>

Tables 2 represents the age distribution of the 200 volunteers of Amakohia community, who were screened for malaria parasites. All the various age groups screened were positive for the parasite, with the age group of 19-21 producing the highest prevalence rate of 50(50%) among the pregnant women while the age of 3-5 produced the highest of 80(80%) among the infants.

