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Prevalence of Malaria Parasites among Patients Attending Hospitals in Igbesa, Ado/Odo-Ota Local Government.

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According to the latest World malaria report, there were 228 million cases of malaria in 2018 compared to 231 million cases in 2017. The estimated number of malaria deaths stood at 405 000 in 2018, compared with 416 000 deaths in 2017. Nigeria is a high endemic country of malaria. This study is on the prevalence of malaria in two hospitals in Igbesa, Ogun State, Nigeria. The study was carried out between May and June 2019. A total of two hundred (200) individual were examined. Microscopic examination was carried out on the thick film prepared. The overall total prevalence showed a total number of 85 (85%) positive for malaria. The patients of age group 11-20 years had the highest rate of infection (100%) in both hospitals. Also adult ages 21-30 years of age had (85%) prevalence of malaria.Percentage of students infected with malaria was 84.5% while trader and factory workers had prevalence of 85% and 88.8% respectively. There is need for rigorous control measures and enlightens campaign to further educate occupants of this area on malaria transmission.
Campaign, Malaria, Patients, Igbesa

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I. Introduction

Malaria is an infectious disease which is as old as man (Sherman, 1998), it is caused by a single- cell protozoan parasite Plasmodium spp. In Nigeria malaria is holoedemic (Ukpa and Ajoku, 2001). The disease is transmitted from human to humanthrough the bite of infected female adult Anopheles mosquito. More than 2 billion people are at risk of malaria per year (Martins and Lefebvre, 1995).

Malaria is still the most important parasitic disease in the tropic which causes greater economic lose than any other disease in area such as western Savannah areas of tropical Africa. Children under the age of 8 and women in their first pregnancy are most vulnerable to the disease. The effect of malaria is noticeable in rural areas where malaria frequently strikes during that period of the year when the need for agricultural work is greatest (WHO, 2000). The World Health Organization report that there were 198 million cases of malaria worldwide in 2003 (WHO, 2014). Previous study carried out on the prevalence of Malaria Parasite by Chimere, Wellington and Phillip in pregnantwomen in Lagos, South West Nigeria show that 1030 out of 1084 pregnant women who were recruited into the study was positive of malaria parasite.

Another study done by Kalu*et al*, (2012) on a comparative study of the prevalence of Malaria in Aba and Umuahia Urban Areas of Abia State, Nigeria with a total of 500 individuals were examined for malaria parasites, showed that a total number of 402 (80.40%)were positive for malaria parasitaemia. In Abia 216 (86.40%) individuals were positive while in Umuahia 186 (74.40%) individuals were positive for malaria parasitaemia.

Nwaorgun and Orjaka (2011)on the prevalence of malaria among children 1-10 years old in communities in Awka North Local Government Area of Anambra State, South East, Nigeria. A total of 1000 pupils (600 primary and 400 nursery, malaria infection was most prevalent among 1-4 year old, highest among 3 years old (76.4%), followed by 1 and 4 years and with 71.3 and 71.2% respectively and 62.04 for 2 years old. Studies reported that in Nigeria, malaria infectedpatients represent approximately 60% of out-patient hospital visits in Nigeria, 30% of hospitalizations, 30% of under-five mortalities, 25% of infant mortalities and 11% of maternal mortalities (Okocha,*et al*., 2009). In the last decade, the fight against malaria and its propagating agents in Nigeria and across Africa has not been as effective due to the emergence of resistant species of the parasites, coupled with the advent of vectors that appear resistant to commercially available insecticides Chimere*et al*.,2005. This has caused a paradigm shift in behavioral pattern of the malaria vectors in which they are now just as devastating when encountered outdoors as well as indoors. Its rate of transmission is characteristically distinct between the rainy and dry seasons (Chansuda*et al*., 2008). Data revealed that the countries microclimate, topography, population densities, cultural practices, etc also contribute towards the spread of the disease Aliounee*t a*.,*l* 2010. These include residence and leisure activities within close proximity to stagnant bodies of water, public exposure to rural lavatories, general neglect for routine check-up or screening

and monthly rainfall, The present work is therefore designed to determine the prevalence of malaria parasites among patientsattending Hospitals in Igbesa, Ado/Odo-Ota Local Government Area, Ogun State, Nigeria.

II. Materials And Methods

2.1. Study Area

The study location is Igbesa, metropolis, Nigeria situated between Latitude 6^0 32' 0.9672" N and Longitute $3^0$8' 2.9796"E.

Igbesa is a small town in southern Nigeria, located a little to the north from F100 Highway, about 8 miles west from the city of Lagos. There are about 7,000 living in the town, and it is a small agricultural hub, with a few large agricultural businesses operating in the town.

2.2. Study Population and Ethical Permission

The study population was made up of 96 male and 104 female patients attending the two hospitals in Igbesa, Ogun State, Nigeria who all gave their consent to participate in the study.

2.3. Ethical Permission

Approval to conduct the study was obtained from the State Ministry of Health prior to sample collection. Subjects used in this study were those who's informed consent or that of their guardian were sought. They were patients within the all age groups examined for malaria parasite infection at the general outpatient department (GOPD) of the two hospitals, Ogun State, Nigeria.

2.4. Blood Collection and Screening

Patients attending the hospitals, who were feverish with asymptotic signs of malaria were screened for Plasmodium infection. Finger prick blood samples were collected to prepare thick blood films (in duplicate) were also prepared, stained with 10% Giemsa stain for 20 minutes and examined for malaria parasites by microscopy. Each of the films was assessed and the mean value was recorded.

2.5. Statistical Analysis

Statistical analysis was done using SPSS Software.

III. Results

Blood samples were collected from a total of 200 individuals. These blood samples were examined for the presence of malaria, in relation to age/Sex and occupation among people in Igbesa and the results are presented below.

The result of the investigation on the prevalence of malaria parasitamia in Igbesa communities shows that out of 200 individual examined, 82 (85.4%) 0f male were positive for malaria parasites while 88 (84.6%) were positive for malaria parasite. There was no significant association in malaria infection in relation to gender status of respondents that participated in this study ($P < 0.05$.)

Table 1 show the gender related prevalence of malaria parasite in the hospitalsTable 1: DISTRIBUTION OF MALARIA PARASITES IN RELATION TO SEX OF RESPONDENTS

SEX	No Examined	Malaria Positive	Malaria Negative
MALE	96	82(85.4%)	14(14.5%)
FEMALE	104	88(84.6%)	16(15.4%)
TOTAL	200	170	30

Table 2 shows that students have the lowest prevalence of malaria parasite of (84.5%) as compare with 85% occurrence in students. The factory workers had the highest prevalence (88.8%). Statistical analysis of the findings from the results below, revealed that there were no significant associations the prevalence of malaria infection in relation to occupation of the respondents that participated in this study. ($p > 0.05$)

Table 2:DISTRIBUTION OF MALARIA PARASITES IN RELATION TO OCCUPATION OF RESPONDENTS

Occupation	No examined	Malaria Positive	Malaria Negative
Students	142	120(84.5%)	22(15.4%)
Traders	40	34(85%)	6(15%)
Factory Workers	18	16(88.8%)	2(11.1%)
Total	200	170	30

Table 3:DISTRIBUTION OF MALARIA PARASITES IN RELATION TO AGE OF RESPONDENTS

Age group	No examined	Malaria Positive	Malaria Negative
1-10	44	32(72%)	12(27%)
11-20	40	40(100%)	- (0%)
21-30	94	80(85%)	14(14.8%)
31-40	12	10(83.3%)	2(16.7%)
41-50	6	6(100%)	(0%)
51-60	---	- (0%)	- (0%)
>60	4	2(50%)	2(50%)
TOTAL	200	170	30

Table 3 show that there is prevalence of malaria parasite in Igbesa community and among all the age groups in the sampled population. A total population of 200 individuals was tested for malaria parasite and 170 were positive. The total percentage prevalence ranged from 14.8% to 100% across the ages. There was statistical significant association between the age and malaria infection in this study ($P < 0.05$).

IV. Discussion

One factor recognized in these hospital facilities is that there is high level of parasitamia. The high prevalence rates of malaria (85%) revealed that malaria infection is endemic in this community. The high prevalence of malaria in the communities could be due to some factors such as amount of rainfall, relative humidity, temperature, extent in urbanization, availability of breeding place for malaria vectors, overcrowded human populations and the behavioural attitude of the inhabitant of the area among others. The overall prevalence of (85%) reported in this study was similar to the report of Kalu*et al,.* (2012) on the high prevalence of malaria parasites of (40%) and (74.40%) parasitamia both in AbiaandUmuahia.

Among the infected individuals, data revealed that the males were far more susceptible to infection82 out of 96 male patients (85%) in comparison to 88 out of 104 female participants (84.6%).

The similar rates of infection observed among males (85.4%) and females (84.6%) could be the result of similar exposure to malaria parasite due to environmental and living conditions which support vector.Female subjects showed a lower prevalence compared to males in the currents study. The reason for these differences in prevalence between females and males cannot be empirically traced to any reason in particular, it may have occurred by chance. Gilles and Warell. (1993) reported that there is no scientific evidence that susceptibility to malaria is gender based.Nwaorgu and Orajaka (2011) found that males may be more prone to the disease than the females.Malaria prevalence among the sexes was not statistically significant ($P>0.05$), malaria parasitaemia was slightly higher among the males than the females (Table 2). This agrees with the result obtained by Mendel and White (1994); Pelletier *et al*., (1995)Malcom and Ukpai and Ajoku,. (2001) Studies have shown that females have better immunity to malaria and varieties of other parasitic diseases and this was attributed to hormonal and genetic factors.Portilo and Sullivan (1997)suggested that genetic factors could play a role by endowing females with immuno-regulatory potentials to cope better with some disease infections. This may equally be attributed to the fact that males expose themselves to the bites of mosquitoes and other vectors more thanfemales, especially when the weather is hot and during farm work.Exception is found during pregnancy and reproductive ages, when females are more vulnerable to malaria attacks due to immune suppression.

Table 2 shows the Prevalence of Malaria infection in relation to occupation of the respondents. A total of 142 Students were tested out of which 120 (84.5%) were positive while out of 40 trader that were tested 34(85%) were positive and out of 18 factory workers tested 16(88.8%)were positive. Factory workers have the highest percentage of prevalence. This is in accordance with Natheal, 2012 report on the majority of employed person being found infected with malaria as a result of exposure to the disrupted mosquito habitat as most of them are workers from semi urban areas.

Table 3 shows the prevalence of malaria infection in relation to age group. The highest prevalence of malaria infection of 91.1% was recorded in the age group 1-10 years, followed by age groups 21-30 (79.7%), 11-20 (79.2%) while the lowest prevalence rate was recorded in age group above 60 years (56.8%).This finding is however, consistent with the reports of Alioune*et al*.,(2010) who observed 51.8% each among the age groups 1-13 years and 55-68 years in Dielmo and Ndiop villages of Senegal. Perkin, *et al*., (1997) asserted that, there is slow acquisition of active immunity to malaria; this could be the reason why subjects of lower age groups were susceptible to malaria in this study. It is also in consistence with W.H.O report 2002; malaria cases mostly affect children below five years old. WHO (2009) maintains that the prevalence of malaria decreases with increase of age. This could be attributed to the fact that individual of higher age have developed immunity against plasmodium parasites.

Malaria prevalence was statistically significant in the various age groups ($P<0.05$). Prevalence of malaria in other age groups was also high which was in agreement with Uneke*et al*., (2005) who recorded higher prevalence among the older age groups in a similar study in Jos, Nigeria. During hot weathers, adults are

mostly seen sleeping outdoors, sometimes for the whole night exposing themselves to the risk of rate of exposure to mosquito bites.

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