Prevalence of Lymphatic Filariasis in Ndiagu Ikenga Ogidi, Idemili North LGA, Anambra State Nigeria

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ABSTRACT

This study was conducted to determine the prevalence of Lymphatic filariasis (Lf) amongst inhabitant of Ogidi in Idemili North Local Government of the Anambra State. Venous blood samples were collected from 104 randomly selected inhabitants from 10 communities and examined using standard parasitological methods. Standardized questionnaire were also administered immediately after blood samples collection to assess their age, sex, occupation and level of education. Results obtained showed an overall prevalence rate of 20.2%. Infection rate was higher in males (23.07%) than females (19.2%). Age group amongst 41-50 years recorded highest prevalence rate of 35.7% while least infection was found among 10-20 years of age (0.0%). Occupational –related prevalence of infection revealed that farmers had highest prevalence (35.0%) of infection while unemployed had least prevalence (1.9%) of infection. Analysis of the data showed a significant difference ($P < 0.05$) in the prevalence of infection between respondents of different age and occupational groups. This study establishes the prevalence of Lymphatic filariasis in Ogidi, Idemili North LGA, Anambra State, Nigeria.

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INTRODUCTION

Lymphatic filariasis (LF) is a tropical disease caused by the parasitic filarial nematode worms, *Wuchereria bancrofti*, *Brugiamalayi* and *Brugiatimori* (Anosike *et al.*, 2005). Of the 73 countries where Lymphatic filariasis is known to occur, 38 are in Africa and in this region infections are exclusively caused by *W. bancrofti* (Mba and Njoku, 2000). The third most endemic country for this disease after India and Indonesia is Nigeria, where bancroftian filariasis is 22.1% (Addiss and Brady, 2007).

The visible manifestations of the disease are severe and disfiguring. Lymphoedema and elephantiasis of the limbs or genitalia, hydrocele and scrotal pathology in men, recurrent infections associated with damaged lymphatic and abnormalities of the renal function occur in an estimated 44 million people (Eigege *et al.*, 2002).

Lymphatic filariasis results in loss of work, productivity, direct and indirect economic loss and functional impairment (Omudu and Okafor, 2007). Consequently the disease is a significant impediment to socio-economic progress of the endemic countries (Srividya *et al.*, 2000). Unprecedented and unplanned urbanization, overcrowding and deteriorating

sanitary conditions in both urban and rural areas is believed to be exacerbating the transmission of this mosquito borne disease in Nigeria (Terranella *et al.*, 2006).

Infact its very obvious that lymphatic filariasis causes a severe mobility which is the second most important cause of permanent disability (Badaki and Akogun, 2001; Vandeu *et al.*, 2013). Acute symptoms such as episodic adenolymphangitis cause severe physical suffering while the chronic conditions such as lymphedema and hydrocele cause permanent and psychosocial problem among others. Therefore, there is need to investigate the lymphatic filariasis prevalence amongst inhabitant of Ndiagu Ikenga Ogidi in Idemili North Local Government Area, Anambra state Nigeria.

MATERIALS AND METHODS

Study Area

The study was conducted in NdiaguI kenga Ogidi in Idemili North Local Government Area, Anambra State Nigeria. This Community is located about 90 kilometers from Awka, the state capital. It is situated between longitude 6° 36' E- 7° 05'

E and Latitude 5° 43' - 6° 12' North. It is characterized by two main seasons, the rainy and dry season. It has an annual mean temperature values of between 25°C to 33°C. Most of the inhabitants belongs to Igbo ethnic group. The study population was made up of students, workers (both Public and Private) unemployed, traders, farmers.

Collection of samples

Ethical Consideration:

Prior to the collection of blood samples, permission was sought from head of the Community of Ndiagu Ikenga Ogidi, also consent of participants. Thereafter, a fixed date was agreed for sample collection.

One hundred and four blood samples were collected for this study, 2ml of venous blood samples were obtained from each participant into ethylene diaminetetraacetate (EDTA) anticoagulated bottles. The samples were labeled accordingly and taken to the laboratory for examination.

RESULTS

Of the 104 respondents examined for Lymphatic filariasis, 21 were positive for *W. bancrofti* microfilariae. This gave a prevalence of 20.2%. Infection varied amongst age group. Statistical analysis of the age-related prevalence of lymphatic filariasis revealed that infection increases with age. This was

Questionnaire was administered to each respondent immediately from which personal information on age, level of education, occupation, knowledge and attitude was derived.

Blood Samples examination

Thick smear technique were used for this analysis according to (10). Two (2) mls of blood samples were placed on a clean grease free slide and a blood film was made on each sample. It was allowed to air dry and then stained with Giemsa stain. It was then viewed under the microscope using X100 Objective.

Statistical Analysis

Data collected were analysed using the chi-square test (X^2) to compare and test for significance

found to be significant at $P < 0.05$. Persons within 10-20 years of age had lowest prevalence rate of 0% while age 41-50 years recorded highest prevalence rate of 35.7%. Details are shown in Table 1.

The sex of the individuals at $P < 0.05$ variation did not have any influence on the prevalence of the parasite though lymphatic filariasis was found to have occurred more in males (23.07%) than in females (19.2%) Table 1

Table 1: Percentage Prevalence of Lymphatic Filariasis in age/sex groups in the study Area.

Age/sex Group (%)	Male		No. Examined	Female		Total
	No. Examined	No. +ve (%)		No. +ve (%)	No. Examined	No. +ve (%)
10-20	2	0 (0.0)	6	0 (0.0)	8	0 (0.0)
21-30	2	0 (0.0)	25	4 (16.0)	27	4 (14.8)
31-40	10	2 (20.0)	29	7 (24.1)	39	9 (23.1)
41-50	4	2 (50.0)	10	3 (30.0)	14	5 (35.7)
51-80	8	2 (25.0)	8	1 (12.5)	16	3 (18.6)
Total	26	6 (23.07)	78	15 (19.2)	104	21 (20.2)

Of the 104 inhabitants interviewed, farmers recorded highest prevalence with 38.5%, followed by traders with 35.0 %. This was totally different to 54% that had no formal education. Most of the inhabitants interviewed were within the age bracket of 31-40years (38%) while those of 0-20 years were the least in number with 7.7% respectively. Demographic characteristics of the inhabitants were recorded in Table 2.

DISCUSSION

This study has revealed a prevalence of 20.2% for Lymphatic filariasis. This shows that Lymphatic filariasis is an important Public Health problem in Ogidi as observed elsewhere in Nigeria (Gyapong *et al.*, 1998). This could be attributed to inhabitants being exposed to mosquito bites, not using mosquito net and unhealthy environment. Water found in containers, potholes and all hollow materials that are found around giving mosquitoes the opportunity to breed. This agrees to the work of Obi *et al.* (2011); Wijesinghe *et al.* (2007)

Table 2: Demographic Characteristics of Inhabitants by Occupation, Educational level and Age group.

Occupation	Frequency	Percentage
Students	10	9.6
Farmers	40	38.5
Civil Servants	16	15.4
Traders	36	35.0
Unemployed	2	1.9
Total	104	100
Education Level		
No Formal Education	56	54
Primary Education	22	21.2
Secondary Education	8	7.7
Higher Education	18	17.3
Total	104	100
Age Group		
10-20	8	7.7
21-30	27	26.0
31-40	39	38.0
41-50	14	13.5
51-80	16	15.1
Total	104	100

Results obtained also shows a variation in the distribution of infection in relation to sex, age, occupation and level of education as reported in similar studies (Orji *et al.*, 2009). The high infection observed among the males could be attributed to their level of exposure to mosquito bites. Males usually engage in activities such as swimming, fishing and farming, thus exposing them to infection than their female counterparts.

Subjects within the age group of 31-40 years were most infected. They constitute the labour force. They usually engage to farming, trading and after the day's job the recreate by going to drinking places or bar which is usually in an open place where they are more exposed than other age group.

The low infection rate among those between the age group 10-20 years could be attributed to differences in behavior and lack of exposure.

Occupation plays a vital role in the distribution of Lymphatic filariasis. In this farmers were the most infected, followed by traders. This was attributed to the nature of their occupation. Their job brings them into contact with the vectors (Orji *et al.*, 2009; WHO, 2011). Whereas the low infection rate observed among unemployed and students could be due to the nature of their work which restricts them from engaging in activities like farming, fishing thus are less exposed to infection.

The level of knowledge contributes to the dissemination of diseases (Anosike *et al.*, 2005; Wijesinghe *et al.*, 2007; WHO, 2011). In this research, inhabitants with no formal education recorded highest prevalence than others. Lack of information encourages failure. This agrees with the work of Obi *et al.* (2011); Orji *et al.* (2009). Poor or unhealthy environment favours the breeding of the intermediate host coupled with the nature of occupation of the peoples are factors that determines the transmission of lymphatic filariasis in the study area. Infection can be controlled through the proper disposal of empty containers, building irrigations, eradication of Mosquito intermediate host and health education on the relationship between exposure and infection.

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