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Urinary Schistosomiasis among inhabitants of Aluu, rivers state, Nigeria

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Abstract

The investigation of Urinary Schistosomiasis was carried out in Aluu community in Rivers State, Nigeria. This was because of the lifestyle of the inhabitants who are mostly farmers and fishermen. A total of 1,500 individuals was sampled from the seven quarters of the community made up of 755(50.3%) males and 745(49.7%) females. Urine samples were collected from the consented individuals in pre - numbered, screw capped bottles, between 10.00 am to 1.30 pm. 10 ml of each sample was centrifuged for parasitological examination. The overall infection recorded from the investigation was 2.0%. In the community related infection, the following was recorded, Mbodo (1.3%) and Omahunwo (0.7%) while other communities had no infection. The infection was found to be sex dependent that is all the positive results recorded were males, 30(2.0%). According to age specific infection, the results were 40 – 49(1.7%) and 50 – 59(0.3%) respectively. The occupational assessment of the infection stood as, fishermen (1.47%) and farmers (0.53%). Aluu community, though recorded low infection rate, requires prompt treatment of the infected few to avoid subsequent spread to healthy areas.

Keywords: Schistosomiasis, Aluu community, fishermen, farmers, Mbodo, infection.

1. Introduction

Schistosomiasis is a chronic, parasitic disease caused by blood flukes of genus *schistosoma*. There five major strains of schistosoma worm infection in man namely, *Schistosoma haematobium*, which causes urinary schistosomiasis, *Schistosoma mansoni*, *Schistosoma japonicum*, *Schistosoma intercalatum* and *Schistosoma mekongi* which are responsible for intestinal schistosomiasis [8]. Schistosomiasis affects agricultural and fishing populations. People who do domestic chores in infested water, such as washing of cloths, and swimming are at risk. Children are also susceptible as a result of inadequate hygiene and play habits.

Urinary schistosomiasis caused by *Schistosoma haematobium* constitutes a major public health problem in tropical and subtropical countries [4]. *S. haematobium* infection can cause haematuria, dysuria, nutritional deficiencies, lesions of the bladder, kidney failure and growth retardation in children [5]. Nigeria has been recorded as one of the highly endemic countries has estimated 101.28 million persons at risk [1].

Studies among school children has recorded 20-40% prevalence in typical communities [6]. Human contact with appropriate snail intermediate host in contaminated water bodies promotes parasitic penetration [10].

This study tends to survey the occurrence of urinary schistosomiasis among different age groups in Aluu community because of the nature of their terrain and major occupation.

2. Materials and Methods

2.1 Study area

The study was carried out in Aluu community in Rivers State, Nigeria, which is located at latitude 4.57⁰N and longitude 6.25⁰E. Aluu has seven quarters; Omike, Omoda, Omochiorlu, Omoko, Mbodo, Omahunwo, and Omokiri. The inhabitants are farmers, fishermen, hunters, few civil servants, pupils and students. Their settlement pattern is compact such that family houses overlap. Ethical consideration was obtained from the community head, who in turn addressed his subjects who gave their consent for the study.

2.2 The study population

The study population was 1,500 individuals made up of 755 males and 745 females selected randomly from the seven quarters of Aluu community. The participants were classified into five age groups.

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2.3 Urine collection

Urine samples were collected from the selected households by house to house visitation [9] between 10 a.m to 12 noon. Each individual among the sampled population was given a pre-numbered plastic screw-capped bottle bearing their biodata. The samples when collected were taken to Divine medical clinic for laboratory examination.

2.4 Urine examination

The urine samples were examined visually for haematuria. 10 ml of each sample was centrifuged at 5000 rpm for 5 minutes. The supernatant was discarded and sediments transferred onto grease free slide and viewed with x10 objective lens.

The results obtained were statistically compared using Chi Square to find the relationship in the distribution of the disease among the quarters and age effects.

3. Results

The parasitological examination of the urine samples gave the following results;

Table 1: Community related Urinary Schistosomiasis

Quarters	No examined	No infected	% infection
Omike	125	-	-
Omoda	150	-	-
Omochiorlu	175	-	-
Omoko	240	-	-
Mbodo	375	20	1.33
Omahunwo	190	10	0.7
Omokiri	245	-	-
Total	1,500	30	2.03

Infection was recorded only in Mbodo (1.33%) and Omahunwo (0.7%).

Table 2: Age related urinary Schistosomiasis in Aluu community

Age range	No examined	No infected	% infection
0 - 14	500	-	-
15 - 24	150	-	-
25 - 39	300	-	-
40 - 49	235	25	1.7
50 - 59	315	5	0.3
Total	1500	30	2.0

In the age related infections, the older groups were highly infected that is 40 - 49 and 50 - 59 with infection rates of 1.7% and 0.3% respectively.

Table 3: The sex related urinary schistosomiasis in Aluu community

Community	Sex	No examined	Infection rate
Omike	Male	75	-
	Female	50	-
Omoda	Male	50	-
	Female	100	-
Mbodo	Male	200	20(1.3%)
	Female	175	-
Omochiorlu	Male	100	-
	Female	75	-
Omokiri	Male	150	-
	Female	95	-
Omoko	Male	125	-
	Female	115	-
Omahunwo	Male	55	10(0.7%)
	Female	135	-
Total		1,500	30(2.0%)

The males were more exposed to urinary schistosomiasis in the communities than females. Among the communities, Mbodo (1.3%) and Omahunwo (0.7%).

Table 4: Occupational related prevalence of Urinary Schistosomiasis

Occupation	No examined	No infected
Farmers	300	8(0.53%)
Hunters	250	-
Fishermen	230	22(1.47%)
Civil Servants	120	-
Students	350	-
Pupils	250	-
Total	1500	30(2.0%)

The major groups involved in Urinary Schistosomiasis were farmers and fishermen as shown in the table.

4. Discussion

The overall infection rate in the study area was 2.0%. Though the incidence is too low, but confirms the existence of the disease in the area. Among the seven communities sampled, only two recorded infections; Mbodo (1.33%) and Amahunwo (0.7%). This may be because the infection is new in the area [7] or perhaps the aquatic environment here is too salty to sustain the growth of the snail intermediate host which are fresh water snails [2].

The intensity of infection in the two communities those were positive involved only males (2.0%). This can be found to be related to the type of occupation that was prevalent; fishing, which is solely the work of the men folk. Therefore, gender was significant in the distribution of the infection which was based on the behavior and water contact activities. It could also be attributed to cultural habit of regular and longer contact with the snail vector. When fishing.

Socio-economic factors were found to influence the spread of urinary schistosomiasis; fishing and farming were significantly correlated with the infection as recorded in the study.

In the age related infection, the age groups 40 - 49 and 50 - 59 were infected, perhaps they were the groups actively involved in fishing and farming. The majorities of the youths were either students or are into white kola jobs. Therefore, the farmers and fishermen were found to be at risk and as such the pathway for the disease transmission in the study area.

5. Conclusion

In Aluu community, urinary schistosomiasis was found to be linked to specific agricultural activities; fishing and farming. Therefore, there is a need for urgent intervention such as health education and treatment of infected people to stop the spread of the infection.

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