

# Prevalence of urinary schistosomiasis among aids patients in otukpo benue state.

E Okwori, O Alao

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## Abstract

Background: Although there has been no proven association between urinary schistosomiasis and the human immunodeficiency Virus (HIV) infection, the resulting raw surfaces and wounded mucosa that characterize infestation with genito- urinary schistosomiasis may increase the susceptibility of patients infested with this trematode to HIV infection. Hence, prevention of urinary schistosomiasis may also prevent and reduce susceptibility to HIV infection. The aim of this paper is to determine the prevalence of urinary schistosomiasis among people living with HIV/AIDS (PLWAS) and Non HIV persons in Otukpo , an urban area of Benue state where HIV / AIDS is highly endemic. Methods: sediments of the centrifuge urine of the patient were examined microscopically. Schistosoma haematobium was identified by its terminal spine. Result: four hundred (20% out of two thousand confirmed HIV patients tested positive for schistosomiasis. Two hundred and ninety (14.5%) of the non-HIV infected patients were positive for the trematode. Conclusion: the prevalence of urinary schistosomiasis is high in Otukpo area, both among the PLWAS and on- HIV persons. Preventive interventions for both schistosomiasis and HIV should be intensified in the area.

## INTRODUCTION

Schistosomes or blood flukes, also known as bilharzias are the most important of the pathogenic treatments. At least 200 million people are infected world wide. And about 65 million people are at risk these people principally resides in sub – Saharan Africa, where *S. haematobium* and *S. mansoni* are wide spread 2, 3.

The infective stage of the organism is a larval stage called cercariae, which are harboured in the species of snail called *bullinus*, the intermediate host. These snails live in water, and are released into the water. The infective stage, often causing transient dermatitis, called swimmer's itches.

The cercariae in the skin develop into schistosomulae, which migrate to the liver, where they develop into mature male and female. The mature *S. haematobium* migrate to the small veins of the urinary bladder which contain the fully developed *S. haematobium*. Eggs are passed through the bladder into the urine and they have terminal spines. Most of the bladder manifestations of schistosomiasis are associated with the deposition of the eggs, with the formation of granulomata and fibrotic lesions in the liver and the bladder. Such effect may herald granulomatous and changes in some

of the patients. The burden of schistosomiasis through out the world is enormous.

Children and farmers have easy and more accessibility to streams and stagnant waters, and farming is the predominant occupation of the Idoma people in the area, so they are more at risk of acquiring the diseases. Earlier work of eagles et al support this 5.

## MATERIAL AND METHODS

Two thousand confirmed HIV/AIDS patients at Otukpo general hospital were tested for urinary schistosomiasis between January, 1998 to September 2000.

Also two thousand patients who were Sero- negative for HIV ( non – HIV patients) had their urine tested for schistosomiasis. Each urine was also studied bacteriologically.

Using sterile tested tubes, the urine was centrifuged. The sediment was inoculated onto cystein lactose electrolyte deficient agar (CLED) M.C. conkey agar, and blood agar. They were incubated at 37°C for 48 hours. The isolated bacteria were analyzed biochemically and antibiotic sensitivity pattern was established for each significant

bacterium.

The urine sediment was also examined microscopically for the eggs of *S. haematobium*.

## RESULT

Two thousand confirmed HIV/AIDS patients using double ELIZA at Otukpo General Hospital presented with urinary symptoms. Four hundred (20%) of them had urinary schistosomiasis. Thirty patients (1.5%) had both urinary schistosomiasis and bacturia.

All the patient presented with dysuria, while 250 (67.5%) presented with haematuria. Anaemia was found in 125 patients (31.5%). Schistosomiasis was more predominant in male (240 patients representing 60%) than females (160) patients, representing 40%.

Majority of the PLWAs with schistosomiasis were farmers (168) or 42%) while only one (0.25%) was a student.

Two hundred and ninety subjects (14.5%) of the Non- HIV patients tested positive for urinary schistosomiasis. Haematuria was a common presenting feature of the patients. Anaemia occurred in four persons (15).

The profile of the bacteria isolated from the PLWAS with both bacteruria and schistosomiasis was as follows: nine patients had salmonella typhi, seven had paratyphi B, and Six had *S. Paratyphi C* Escherichia coli were isolated from six patients while two patients had proteus species.

## Figure 1

Table: Age and Sex Distribution

Age	HIV patients				Non-HIV patients			
	Males		Females		Males		Females	
	No	%	No	%	No	%	No	%
0 -10	23	5.75	3	0.75	29	11.00	3	1.03
11 – 20	39	9.25	38	9.50	120	41.40	27	9.31
21- 30	35	8.75	41	10.25	25	8.62	18	6.20
31-40	50	12.50	3	0.75	11	3.79	10	3.44
41-50	40	10.00	35	8.75	6	2.07	12	4.13
51-60	30	7.5	36	9.00	5	1.72	11	3.79
Above 60	23	5.75	4	1.00	4	1.38	9	3.10
Total N = 400	240	60%	160	40%	200	69%	90	31%

## DISCUSSION

Theodore Bilharz in 1951 discovered that adult worms of *schistosoma haematobium* in Cairo Egypt, thus the disease was named bilharzias. From that moment, the disease was

spotted in other African countries Nigeria inclusive and found to be most important of the pathogenic trematodes 1, 2.

At Otukpo general hospital, we discovered that many patients including PLWAS presented with urinary symptoms but the urine of many of them yielded no bacterial growth. So we were prompted to look for parasitic causes of their urinary problems.

Four hundred ( 20%) out of 2000 PLWAS had urinary schistosomiasis. The prevalence in this group was high. This may be because of their low immunity. In contrast, two hundred and ninety (14.5%) of the non – HIV infected patients had urinary schistosomiasis, and the lower prevalence of the disease in this group, compare to what in PLWAS, supports the low immunity in them might be responsible for the higher prevalence in them (PLWAS) and the raw surfaces created by the schistosomiasis might have created the chances of the patients be infected with HIV thus the high prevalence of schistosomiasis among the

Among the people living with HIV/AIDS (PLWAS), schistosomiasis was more prevalence in males (605) than in females (40%). This may be because, males do more farm works than females and males also have more easy accessibility to health facilities than female and males also had higher prevalence among the PLWAs.

The age group 31 – 40 years had highest prevalence among the PLWAS (12.5%) and they were majorly farmers, whereas the age group 11-20 years had the highest incidence (27%) among the non- HIV / AIDS patients. Eagles D et al 2002 had a similar experience of high prevalence of schistosomiasis among farmer and school children in the tropic. This group of people are more associated with the infective stage of the schistosoma ( cercariae). Nine of the patient had urinary schistosomiasis and salmonella typhi.

Holman, El at al in 2001 discovered high association of urinary schistosomiasis with salmonella species. Our findings also support this. Vagia D.J et al in 1993 discovered that urinary pathogens are predictors of fatal septicemias associated with HIV infested in Ivory Coast so association of HIV, urinary schistosomiasis, and bacteruria in one patient could lead to more fatality.

## CONCLUSION AND RECOMMENDATIONS

It is our conclusion that the prevalence of urinary schistosomiasis is very high in Otukpo. Combination of

HIV, urinary schistosomiasis and bacteraemia in any patient is a serious burden economically and health wise, a burden both to the patient, families and the community in general.

Agricultural productivity among this group of patients could be very low, which in the nearest future may lead to serious shortage of food in the area; and may lead to starvation of their families.

It is recommended here that Doctors should actively look for schistosomiasis among HIV patients presenting with urinary symptom as the laboratory procedure for this is simple and cheap.

Preventive measure of schistosomiasis in Otukpo area should be very active. Simple preventive measure like wearing of plastic boots by farmers should be taught to the people.

Mechanized farming is expensive but is long term preventive solution to the problem. Children should be educated to avoid bathing in the streams and stagnant water.

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**Author Information**

**EE Okwori**

1. College of health Sciences Benue state university Makurdi

**OO Alao**

1. College of health Sciences Benue state university Makurdi