Prevalence of Urinary Schistosomiasis among the Students of Junior Secondary School Agassa

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Abstract
Prevalence of urinary schistosomiasis among 136 students of junior secondary school Agassa in Okene Local Government Area of Kogi State was assessed. In total 18 students was infected representing 13.2% prevalence. Highest prevalence (21.5%) was recorded among J.S.S. 1 boys and the least (6.3%) was recorded among J.S.S. 3 girls. Generally prevalence of haematobium infection was higher (17.1%) in males compared to 7.4% in females. Prevalence by age showed that the highest (19.6%) was recorded in age group 10 – 12 years and the least (4.7%) in age group 16 – 18 years. There is need for students and the entire community around Ekuku River to be educated on the health implications of urinary schistosomiasis. This will reduce water contact activities in Ekuku River.

INTRODUCTION

Schistosomiasis is the disease caused by a blood fluke of the genus *Schistosoma*. Urinary Schistosomiasis is caused by the species of *Schistosoma* known as *Schistosoma haematobium*. It is one of the most common parasitic infections in the world (Gracio *et al*, 1992), ranking second to only malaria in terms of socioeconomic and public health importance in tropical and subtropical areas (Ogbe, 2002). Urinary Schistosomiasis is an occupational risk encountered in rural areas of developing countries, where potable water is scarce (Ugochukwu *et al*, 2013).

Infection occurs through contact with water infected with the free swimming larval stages of parasitic worms (cacariae) that penetrate the skin and develop in the body to maturity (Bala, Ladan and Mainasara, 2012). Urinary Schistosomiasis resulted in substantial pathological effects in the bladder, ureter and kidney of infected individuals (Pggensee *et al*, 1999).

Aim: To conduct prevalence of urinary Schistosomiasis among students of junior secondary school, Agassa in Okene Local Government area of Kogi State.

Materials and Methods

Study area: This study was conducted from June, 2016 to October, 2016 in junior secondary school Agassa. The choice of the area was based on behavioural pattern of the school children in the community where water contact activities like bathing, swimming, washing are the norm in rivers and streams that are found in the area. The well-known Ekuku River flows through this community.

Sample Collection

Consent for the study was obtained from the school management as well as the parents of the students. Pre-survey formalities such as briefing the students on what schistosomiasis is all about and how to obtain the samples correctly were done.

A total of 136 students comprising 82 males and 54 females were sampled. They included students in J.S.S. 1, J.S.S. 2 and J.S.S. 3

The method of Okanla, Agba and Awotunde (2003) was used to collect samples. All samples were collected between 12:00 noon and 2:00pm corresponding to the period of maximum egg outputs in urine. Urine samples were collected in graduated plastic bottles, subjects were told to empty their bladder completely into the bottle and put on the lid tight. Each student was given a serial number. This was immediately pasted on the corresponding sample.

Examination of urine samples for eggs of *S. haematobium*

The method of Okanla (1991) was used. All samples were taken to the biology laboratory of Federal College of Education, Okene, Kogi State immediately and the total volume of urine passed by each subject was recorded. Samples were allowed to settle for 30 minutes. The urine in each sample was drawn off with an aspirator leaving the last 10ml in the bottle. The content of each bottle was shaken to suspend the sediment and was emptied into a 20ml centrifuge tube. The serial number for each sample was carefully transferred in order not to get the samples mixed up. The tubes were centrifuged at 1000rpm for 5 minutes. The top 9ml was aspirated off. The sediment was re-suspended in the remaining 1ml. A Pasteur pipette which was calibrated to discharge 1ml in 20 drops was used to release 1 drop of the sample unto a microscope slide. A cover slip was placed on it and all *haematobium* eggs present were counted under the 10X objective of a light microscope. The number of eggs counted in 1 drop was multiplied by 20 to obtain the number in 1ml, which translates to the total eggs passed in the total volume of urine originally obtained. The number, in 10ml of urine was then calculated.

Results

Table 1: Prevalence of *Schistosoma haematobium* infection among male students of Junior Secondary School Agassa

Class	No examined	No infected	% infected	
J.S.S. 1	28	6	21.5	
J.S.S. 2	30	5	16.7	
J.S.S. 3	24	3	12.5	
TOTAL	82	14	17.1	ìjrdrb**òtrcf17**

Table 2: Prevalence of *Schistosoma haematobium* infection among female students of junior secondary school Agassa

Class	No examined	No infected	% infected
J.S.S. 1	24	02	8.3
J.S.S. 2	14	01	7.1
J.S.S. 3	16	01	6.3
TOTAL	54	04	7.4

Table 3: prevalence of *Schistosoma haematobium* infection among the students (in total) of junior secondary school Agassa

Class	No examined	No infected	% infected
J.S.S. 1	52	08	15.4
J.S.S. 2	44	06	13.6
J.S.S. 3	40	04	10.0
TOTAL	136	18	13.2

Table 4: prevalence of *Schistosoma haematobium* infection by age

Age group (year)			
10 – 12	51	10	19.6
13 – 15	42	06	14.3
16 – 18	43	02	4.7
TOTAL	136	18	13.2

Table 1 shows that out of 82 male students examined, 14 of them were infected representing 17.1% while table 2 shows that only 4 out of 54 female students examined were infected representing 7.4%

A total number of 136 students (males and females) were examined as revealed by table 3, out of which 18 were infected representing 13:2%. Prevalence of infection by age (table 4) shows that prevalence is highest (19.6) in age group 11 – 12 years followed by 14:3% in 13 – 15 years and the lowest prevalence (4.7%) was recorded in age group 16 – 18 years.

DISCUSSION

The total prevalence (13.2%) recorded in this study population is low compared with what was recorded (74%) by Bala, Ladan and Mainasara (2012) in Abarma village, Gusau, Nigeria. It means that urinary Schistosomiasis is not particularly common in the study area. Given the fact that the study was carried out in only one school out of many, the result could be an under-estimate of the true value. The study has also released that females were less infected (7.4%) than males (17.1%). This is not unconnected with social restriction to water contact activities like swimming or bathing by females. This result agrees with the observations of Ugbomoiko *et al*. (2010) in Osun who reported significant association of urinary Schistosomiasis with gender.

With regards, to age group, where highest prevalence (19.6%) was recorded in 10 – 12 years age group and the lowest (4.7%) in 16 – 18 years age group is also associated with water contact activities as it is observed that younger persons engage in swimming and bathing in rivers than elder ones.

CONCLUSION

This study is first of its kind in the area. It is however evident from the result that urinary Schistosomiasis is not endemic in the study area. More studies with wider scope should be done to determine the prevalence and intensity of *heamatobium* infection in the entire community. There is need for Government to educate the people in the community on urinary Schistosomiasis and provision of portable water supply to discourage swimming or bathing in Ekuku River.

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