

Prevalence and Distribution of Urinary Schistosomiasis in Ohaji/Egbema Local Government Area of Imo State, Nigeria

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ABSTRACT: Studies were carried out on urinary schistosomiasis in 9 communities of Ohaji/Egbema Local Government Area of Imo State, Nigeria. Of the 487 persons examined, 55 (11.3%) were positive for *Schistosoma haematobium* ova. Highest prevalence was recorded in Umuokanne (27.8%), followed by Umukene (16.3%) and Nwori (13.2%), while Umuagwo had no infected persons. The infection varied significantly among various age and occupational groups ($P < 0.05$). The males had higher infection rate (13.2%) than the females (8.8%). About 80.0% of all the infected persons were within the 1-40 years age bracket, while only 20% were within the fifth decade of life and above. A greater proportion of infected persons (47.3%) had haematuria, while supra-public pain and painful urination was observed in 18.2 and 14.5% respectively. The implications of these findings on the community health management in Imo state are discussed. [The Journal of American Science. 2006;2(4):45-48]

Keywords: Urinary schistosomiasis, prevalence, haematuria, Nigeria

INTRODUCTION

Urinary schistosomiasis, a parasitic disease caused by the trematode worm *Schistosoma haematobium* is a very serious environmental health problem in many tropical countries. About 200 – 300 million people may be suffering from the disease world – wide (WHO, 1993). The disease is endemic in Nigeria (Ogbe and Ogunsekan, 1989; Okafor, 1990; Udonsi, 1990; Anosike *et al*, 1992; Akogun *et al*, 1994; Agi, 1995). Water contact activities and traditional agricultural practises are reported as the factors in the distribution of the disease and its snail vectors (Udonsi, 1990).

Prior to the recent studies on urinary schistosomiasis by Okoli and Iwuala (2001 and 2005), only the report of Oldenburg (1942) on the prevalence of the disease in Owerri area of the present Imo state was available in literature. Since these recent studies revealed the endemicity of the disease in the present Imo state, there is the need to carry out a detailed investigation of the spread of the disease in the State.

This study reports the current status of urinary schistosomiasis in Ohaji/Egbema Local Government Area of Imo State, Nigeria.

MATERIALS AND METHODS

The study was carried out in Ohaji/Egbema Local Government Area (LGA), which is one of the 27 LGAs in Imo state, Nigeria. The climate and vegetation of the area has been described (Okoli and Iwuala, 2004).

Four hundred and eighty seven (487) persons were randomly selected from nine communities of the

LGA and examined for the presence of the eggs of *Schistosoma haematobium* in their urine. The 9 communities studied were Nwori, Etioha, Umukene, Umuokanne, Umuagwo, Obile, Awara, Assa and Mgbirichi. Labelled, sterile wide mouthed, screw capped plastic bottles were used to collect midday, midstream urine sample from individual subjects. These urine samples were transferred to the laboratory within 4 hours of collection for analysis.

The urine specimens were thoroughly agitated and 10ml of each sample taken and centrifuged at 500rpm for 5 minutes. The supernatant was discarded and the sediment examined for eggs of *S. haematobium* and counted under the microscope. The results were analyzed as eggs/10ml urine according to age, sex and occupation of subjects.

RESULTS

Out of the 487 urine samples examined, 55 (11.3%) were positive for *S. haematobium* eggs (Table 1). The prevalence rates of the disease were not uniform among the various nine communities studied ($P < 0.05$). Umuokanne community had the highest prevalence of 27.8%, followed by Umukene (16.3%) and Nwori (13.2%), while Umuagwo community had no infected person.

The males had higher infection rate (13.2%) than the females (8.8%) as shown in table 2. Table 3 revealed that across age groups, the highest prevalence (22.2%) was recorded in the 21-30 years age cohort, followed by persons in the 11-20 and 31-40 years age brackets (16.4 and 12.8% respectively).

Table 4 highlights the prevalence of the disease among different occupational groups with farmers being the most infected group (19.8%), while apprentices/students and pupils had 13.0 and 6.8% respectively. Haematuria was the predominant clinical sign of the disease in the area (47.3%) and was

followed by supra-pubic pain (18.2%) and painful urination (14.5%). Four of the subjects (7.3%) were found to manifest more than one symptom at a time, while 7 persons (12.7%) did not present any observable symptom.

Table 1. Prevalence of *S. haematobium* infection in Ohaji/Egbeme Local Government Area of Imo State

| Communities | Number Examined | Number Infected | % Infected |
|--------------|-----------------|-----------------|--------------|
| Nwori | 91 | 12 | 13.2% |
| Etioha | 25 | 3 | 12.0% |
| Umukene | 43 | 7 | 16.3% |
| Umuokanne | 18 | 5 | 27.8% |
| Umuagwo | 28 | 0 | 00.0% |
| Obile | 112 | 8 | 7.1% |
| Awara | 56 | 7 | 12.5% |
| Assa | 75 | 9 | 12.0% |
| Mgbirichi | 39 | 4 | 10.3% |
| Total | 487 | 55 | 11.3% |

Table 2. Sex prevalence of *Schistosoma haematobium* in Ohaji/Egbema L G A of Imo State

| Communities | MALES | | | FEMALES | | | | |
|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------------|-------------------------|
| | No. Examined | No. infected | % Infected | No. Examined | No. Infected | % Infected | Total No Examined | Total N. & (%) Infected |
| Nwori | 49 | 7 | 14.3% | 42 | 5 | 11.9% | 91 | 12 (13.2%) |
| Etioha | 16 | 2 | 12.5% | 9 | 1 | 11.1% | 25 | 3 (12.0%) |
| Umukene | 30 | 5 | 16.7% | 13 | 2 | 15.4% | 43 | 7 (16.3%) |
| Umuokanne | 13 | 5 | 38.5% | 5 | 0 | 0.0% | 18 | 5 (27.8%) |
| Umuagwo | 26 | 0 | 0.0% | 2 | 0 | 0.0% | 28 | 0 (0.0%) |
| Obile | 55 | 5 | 9.1% | 57 | 3 | 5.3% | 112 | 8 (7.1%) |
| Awara | 39 | 4 | 10.1% | 17 | 3 | 17.6% | 56 | 7 (12.5%) |
| Asaa | 23 | 5 | 21.7% | 52 | 4 | 7.7% | 75 | 9 (12.0%) |
| Mgbirichi | 21 | 3 | 14.3% | 18 | 1 | 5.6% | 39 | 4 (10.3%) |
| Total | 272 | 36 | 13.2% | 215 | 19 | 8.8% | 487 | 55 (11.3%) |

Table 3. Age- Related prevalence of Urinary Schistosomiasis in Ohaji/Egbema Local Government Area of Imo State

| Age – Groups | NO Examined | No. Infected | % Infected |
|--------------|-------------|--------------|--------------|
| 1 –10 | 76 | 7 | 9.2% |
| 11-20 | 116 | 19 | 16.4% |
| 21 –30 | 63 | 14 | 22.2% |
| 31-40 | 70 | 9 | 12.8% |
| 41-50 | 94 | 4 | 4.3% |
| 51-60 | 44 | 2 | 4.5% |
| 61 + | 24 | 0 | 0.0% |
| Total | 487 | 55 | 11.3% |

Table 4. Occupation related prevalence of urinary schistosomiasis in Ohaji/Egbema Local Government Area of Imo State

| Occupational groups | No examined | No Infected | % Infected |
|----------------------|-------------|-------------|-------------|
| Farmers | 106 | 21 | 19.8 |
| Civil servants | 107 | 9 | 8.3 |
| Pupils | 164 | 11 | 6.7 |
| Apprentices/students | 108 | 14 | 13.0 |
| Total | 487 | 55 | 11.3 |

Table 5. Clinical signs and symptoms associated with urinary schistosomiasis in Ohaji/Egbema Local Government Area of Imo State

| Presenting Symptoms | Number Examined | Percentage % |
|-----------------------|-----------------|--------------|
| Visible haematuria | 26 | 47.3% |
| Supra-pubic pain | 10 | 18.2% |
| Painful Micturation | 8 | 14.4% |
| More than one Symptom | 4 | 7.3% |
| None (O) | 7 | 12.7% |

DISCUSSION

Apart from Umuokanne community with the highest prevalence, the pattern of infection in the areas is rather low, even one community (Umuagwo) had no infected persons. This may be because infection in the area is new (Okoli and Iwuala, 2004). Furthermore, most of the infected persons were hired labourers from other endemic areas of Rivers, Delta and Ebonyi States. This has some public health importance. Treatment of these immigrant Labourers at the onset would perhaps help in controlling the disease.

There was a differential in the prevalence of urinary Schistosomiasis between the sexes. Similar observations were made by Udorsi (1990) and Ofoezie *et al* (1991), which may be related to socio-cultural factors. As noted by Udonsi (1990), the apparent male bias in prevalence rate may be due to the predominantly male participation in farming occupation. Thus an overwhelming proportion of water-contact activities were taken up by males

In Ohaji/Egbema L.G.A, a steady rise in the prevalence of urinary schistosomiasis was observed from 1-10 and 11-20 years age – group and peaked within 21-30 years age – bracket before a steady decrease with increase in age. This observed decrease in prevalence with increase in age may be attributed to decreased exposure to human water contact rates and increasing immunity with age. Higher prevalence of urinary schistosomiasis among farmers and apprentices/students could also be attributed to higher frequency of contact with infective agents. These categories subjects therefore have greater exposure to infection as a result of occupational duties.

This is the first time data on the distribution of urinary schistosomiasis is recorded for Ohaji/Egbema

Local Government Area of Imo State. It is suggested that any program of urinary schistosomiasis control in Imo state should include the present study area. Such a control program should specifically target the 1 – 40 year age cohort, the farming and apprentices/students occupational groups.

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