The knowledge, attitude and perception of onchocerciasis and ivermectin treatment by the people in Okpuje, Edo State, Nigeria

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ABSTRACT: The study was carried out to determine the knowledge, attitude and perception of onchocerciasis and its treatment with ivermectin by the people of Okpuje, an endemic community in Edo State, Nigeria. A four-step approach involving: a structured questionnaire, personal interview, physical examination and group discussion, were used in the study. Two hundred (200) volunteers, over ten years of age, were randomly chosen for the study. 61 persons (30.5%) had inadequate knowledge of the disease but 139 subjects (69.5%) were ignorant of onchocerciasis. Adequate knowledge has a significant effect on the prevalence of onchocerciasis (P<0.005). Most respondents perceived the various symptoms of onchocerciasis found in the area, namely; itching, nodules, leopard skin, lizard skin and ocular lesion as separate diseases. Some symptoms were regarded as part of the ageing process while some respondents were not bothered by the disease. Although 147 persons (73.5%) were given ivermectin during the yearly single-dose treatment, only 117 respondents (58.5%) actually took the drug while the rest opted for local traditional method of treatment. More females (51.28%) than males (48.72%) accepted ivermectin. The difference was not statistically significant (P>0.05). Members of the community need to be educated and sufficiently mobilized to appreciate onchocerciasis as a health problem so as to positively change their attitude, perception and level of awareness of the disease and the efficacy of ivermectin treatment. That in turn should greatly increase the distribution coverage and acceptance level of ivermectin used for the control of onchocerciasis in the community.

Keywords: Onchocerciasis; River blindness; Ivermectin; Okpuje; Edo State; Nigeria.

Introduction

Onchocerciasis is a chronic parasitic infection with a devastating burden of impaired vision and blindness, and dermatitis on the afflicted (Abiose, 1993, WHO, 1997). About 125 million people worldwide are estimated at risk of onchocerciasis and of these, 96% are in Africa. A total of 18 million people are infected with the disease (WHO, 1995; Etyaale, 2001). It is estimated that the disease affects about 10 million people living in the savannah and rain forest regions of Nigeria. (Edungbola, 1991; Abiose, 1993).

Although a lot of attention has been paid to the clinical symptoms associated with onchocerciasis, there is little information on the knowledge, attitude and perception of local populations in most endemic areas about the disease inadequate attention to this aspect of research could hinder the effective implementation of strategies for the control of human onchocerciasis at the local level.

This paper report the findings of research on the knowledge attitude and perception of onchocerciasis and the extent to which these would affect ivermectin distribution coverage and acceptance level of the
drug by the people in Okpuje, an onchocerciasis mesoendemic rural farming community in Owan West L.G.A, Edo State, Nigeria.

Materials and Methods

The study was carried out in Okpuje, Owan West Local Government Area, Edo state, Nigeria. The study area with its tropical climate lies between longitudes 5° 40’E and 6° 10’E and latitudes 6° 45’N and 7° 15’N. It is located within the forest-savannah transition zone of Nigeria. Several streams which are tributaries of River Owan transverse the community and provide breeding sites for Simulium damnosum, the vector of Onchocerca volvulus.

Four methods were used in the study of the Knowledge, Attitude and Perception (KAP) of onchocerciasis by the people. These were: a structured questionnaire, personal interview, participation observation and group discussion.

Of the 655 persons enumerated in the community, two hundred (200) volunteers, ten years old and above, were randomly chosen for the study. Besides their participation in the KAP studies, they were examined for onchocercal signs and symptoms; and skin-snipped using corneo-scleral punch (2mm bite) for the presence of microfilariae by a physician assisted by local health officials. After the physical examination, each volunteer was given a structured questionnaire for the collection of information on his or her knowledge, attitude and perception of onchocerciasis; and ivermectin treatment. This was followed up with a friendly personal or group interview conducted in ora language, the ethnic language of the people.

Results

A total of 655 people aged five years and above were counted in the house-to-house census conducted at the study site at Okpuje. Two hundred (200) volunteers (102 males and 98 females) of ten years of age and above were randomly chosen for the study.

Knowledge of Onchocerciasis

Sixty one (61) respondents to (30.5%) named the disease correctly as onchocerciasis or river blindness; caused by worms, and transmitted by Blackflies/insects. However, 139 persons (69.5%) responded with wrong answers by stating one symptom such as itching, nodules, bad skin, eye sigh” as the name of the disease. They could not name the causative agent or the vector of the disease.

From the response to the questionnaires, the entire volunteers were placed into two broad groups, according to their knowledge or ignorance of Onchocerciasis (Table 1). The result showed that infection by onchocerciasis occurred more among people who lacked aetiological knowledge (ignorant) of the disease (29%) than among those who were knowledgeable (3.5%). Knowledge had a significance effect on the prevalence of infection (P<0.005).

Attitude and perception of onchocerciasis.

Most male volunteers, who were farmers, admitted that they were usually thinly clothed with shorts and sleeveless singles while at work on the farms. Thus, they exposed most parts of the body to bites of blackflies. Also most males in the community often bathed in nearby streams reputed to be breeding sites of blackflies in the area. Besides, no house was found screened with insect nets.

One hundred and thirty-nine persons (69.5%) regarded some recorded symptomatic effects of onchocerciasis in the community, namely: itching, nodules, leopard skin, lizard skin and ocular lesion as separate diseases, and not linked to the same causative nematode, Onchocerca volvulus 15 subjects (7.5%) perceived leopard skin and lizard skin as part of the ageing process. 7 males (33.3%) infected with nodules, stated that the disease neither incapacitated them nor prevented them from carrying out their routine work.
and that they were not bothered about the disease. 25 individuals (12.5%) admitted using traditional herbal medicines for the treatment of onchocerciasis.

Table 1: The Prevalence of infection in two broad groups respondents placed according to their aetiological knowledge or ignorance of onchocerciasis.

<table>
<thead>
<tr>
<th>GROUP A: Respondents Ignorant about Onchocerciasis</th>
<th>GROUP B: Respondents Knowledgeable about Onchocerciasis</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number infected</td>
<td></td>
<td>65 (32.5%)</td>
</tr>
<tr>
<td>Number Uninfected</td>
<td></td>
<td>135 (67.5%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>200 (100%)</td>
</tr>
</tbody>
</table>

Table 2: Ivermectin Distribution Coverage and acceptance level by sex at Okpuje.

<table>
<thead>
<tr>
<th>SEX</th>
<th>VOLUNTEERS: WHO RECEIVED IVERMECTIN DURING THE YEARLY SINGLE-DOSE DISTRIBUTION</th>
<th>VOLUNTEERS: WHO DID NOT RECEIVE IVERMECTIN DURING THE YEARLY SINGLE-DOSE DISTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A: ACTUALLY TOOK IVERMECTIN TREATMENT</td>
<td>B: DID NOT TAKE IVERMECTIN TREATMENT</td>
</tr>
<tr>
<td>MALE</td>
<td>57 (48.72%)</td>
<td>17 (56.7%)</td>
</tr>
<tr>
<td>FEMALE</td>
<td>60 (51.28%)</td>
<td>13 (43.3%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>117 (100%)</td>
<td>30 (100%)</td>
</tr>
</tbody>
</table>

Attitude towards ivermectin treatment

The National Onchocerciasis Control Programme (NOCP) using the Rapid Assessment Method (RAM) in 1996 declared the community as hyperendemic for onchocerciasis. However, during this study, the nodular prevalence at Okpuje was 10.5%. The overall prevalence of infection based on skin-snipe positivity for *Onchocerca volvulus* microfilariae was 47.5%.

Ivermectin distribution started in the community in 1996, using the community-based treatment (CBTI), which was later changed to the on-going community-directed treatment (CDTI).

During this study, 147 persons (73.5%) received ivermectin during the yearly mass distribution exercise. Only 117 persons (58.5%) out of the 147 individuals who were given ivermectin, admitted to have actually taken the drug treatment. Of the 117 persons who took ivermectin 60 (51.28%) were females while 57 (48.72%) were males (Table 2). Out of the 30 individuals who were given ivermectin but did not take the treatment, 13 (43.3%) were females while 17 (56.7%) were males. Also, 23 persons (76.6%) out of the thirty, claimed that ivermectin had no effect or did not eliminate/cure the disease symptoms; 5 subjects (16.6%) felt that the period of treatment was too long; and 2 subjects (6.6%) feared adverse reactions. These individuals subsequently discontinued ivermectin treatment.

However, 53 respondents (26.5%) were not given ivermectin during the yearly single-dose mass distribution exercise, 27 subjects (50.94%) in this category, claimed they were absent at that time. 11 persons (20.75%) alleged that the community drug distributor (CDD) omitted their names from the
treatment list. 15 persons (28.3%) rejected the drug outright because they did not know the benefits of ivermectin.

Discussion

According to Ukoli (1992) many authorities believe that the knowledge, attitude and practice (KAP) of the peasants of rural Africa predispose them to infection. The results obtained from 200 volunteers in this study showed that the people of Okpuje lacked adequate knowledge about onchocerciasis. Only 61 subjects (30.5%) named the disease correctly; knew about the *Onchocerca* worms as the causative agents of the disease, and black flies or insects as disease vectors. It was observed that infection by onchocerciasis occurred more among respondents who lacked adequate knowledge of the disease than among those that were knowledgeable. Consequently knowledge of onchocerciasis significantly affected the prevalence of infection (P<0.005).

Richard *et al.*, (1991) in a similar study to determine the knowledge attitude and perception of onchocerciasis among subjects in an endemic area of Guatemala, found that although the people did not perceive onchocerciasis as serious problems; 39% of the residents knew that the disease was caused by a worm. 5% of the people knew that the condition was acquired through the bite of an insect. Nwoke *et al.*, (1992) in Jos, Plateau State, Nigeria, reported that though villagers in endemic areas knew of the nuisance of blackfly bites, the majority of them lacked aetiological knowledge of onchocercal lesion. In this study, it was found that 24.5% of the respondents knew that onchocerciasis was acquired through the bites of backflies, yet nobody had taken steps to prevent or reduce man-vector contact. For instance, male farmers still exposed most parts of their bodies to blackfly bites in the farms, no house in the community was found screened with insect nets. 25 person (12.5%) admitted using traditional herbal medicines for the treatment of onchocerciasis. 33.3% of the males infected with nodules were not bothered by the disease since they were neither incapacitated nor prevented from carrying out their normal work and 7.5% of the respondents perceived leopard skin and lizard skin as part of the ageing process. All these showed clearly poor attitude towards the diseases in the community. Amazigo (1993) observed that culture had a lot of influence on the attitude of rural dwellers towards the disease. He reported that women in a rural farming community in Eteh, Nigeria, have traditional beliefs about onchocerciasis which differ from the concepts of modern science. He concluded that recognizing these beliefs could allow health workers gain their confidence and participate in control programmes.

Ivermectin, when taken annually, has the ability to bring about sustained reduction in skin and eye microfilariae to very low levels with reduction in morbidity (WHO, 1997; Abiose 1998) and transmission (Cupp *et al.*, 1992; Remme, 2002).

According to Molyneux (1995), 65-80% coverage is necessary for significant and persistent regression in morbidity. In this study at Okpuje, although ivermectin distribution coverage was high (73.5%), yet ivermectin acceptance was only 58.5%. The prevalence of infection obtained during the study was 47.5%. The high prevalence of onchocerciasis in Okpuje inspite of many years of annual dosing of the people with ivermectin could be attributable to the low acceptance level of the drug. There are eligible individuals who refused to take the drug whenever it was administered. There were others who initially took the drug but refused to continue the treatment as a result of adverse reactions or absence of physical improvement on the symptomatic effects. Others were absent during the time of treatment. These individuals constitute a reservoir for infection and reinfection in the community. Also, in this study at Okpuje, more females, (51.28%) than males (48.72%) accepted ivermectin treatment. However, the difference was not statistically significant, (P>0.05). These findings are similar to the report of Wagbatsoma and Aisien (2001) who observed ivermectin distribution coverage of 85.74% but a relatively high prevalence of onchocerciasis of 42.1% in Ekpan village, Edo State. They also reported that more females took ivermectin than the males. Abanobi (2000) reported a high ivermectin coverage ranging from 71% to 92%, in nine communities surveyed in Imo State, Nigeria. Richards *et al.*, (1991) in a similar study in Guatemala reported that the major reasons given for not taking ivermectin was fear about drug related adverse reactions. However, he observed that general well being, improved energy level, improved visual acuity and cure of onchocercal nodules and microfilariae were the motivating benefits for accepting ivermectin.
According to findings reported in TDR (2001), increased knowledge and awareness of onchocerciasis had made it easier for health workers to engage endemic communities in the single-dose annual ivermectin treatment programmes to obtain their commitment to carry out and support the treatment themselves.

**Conclusion**

Adequate knowledge of *Onchocera volvulus*; its mode of transmission; disease manifestation; and the efficacy of ivermectin treatment would bring about the desired positive change of attitude and perception or behaviour that would enhance individual and community acceptance of ivermectin at Okpuje. Besides the door-to-door distribution method, the CDDIs should ensure that ivermectin is actually taken on delivery. In addition, effective age-grade mobilization of the people would ensure a greater distribution coverage and acceptance level of ivermectin treatment in order to make onchocerciasis control programme at Okpuje very successful.

**References**


