NCIDENCE OF ASCARIS LUMBRICOIDES AMONG PATIENTS ATTENDING ZARIA CLINIC AND MEDICAL CENTRE (ZCMC), ZARIA, KADUNA STATE-NIGERIA

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Abstract
Ascariasis has a worldwide distribution. It causes death, impairs the physical, mental and intellectual development thereby exerting tremendous impact on productivity of individuals especially the future leaders of tomorrow. The study achieved the following aims and objectives; to determine the effect caused by Ascaris lumbricoides on some patient attending Zaria clinic and medical centre (ZCMC) and to determine whether the incidence of Ascaris lumbricoides is increasing or decreasing. After using appropriate methods, materials and procedures the study discovered the following: The patients with the age-bracket 1-5 years have the highest incidence of Ascaris lumbricoides in the study area; The patients on 16-20 years age-bracket has the lowest incidence of Ascaris lumbricoides in the study area; On the basis of gender, the male patients have the highest incidence of Ascaris lumbricoides than their female counterparts in the study area. Based on the findings of this study, it is recommended as follows: Infected persons should be treated and adequate attention should be given to awareness, and children, parents and the general public should be educated on the mode of infection and epidemiology of the parasite; Government should provide sufficient fertilizer to famers to avoid the use of untreated human faeces as manure; Proper hygiene should be ensured by avoiding defecation in an open field and Standard cleaned toilet should be provided in every house hold.

Keywords: Ascaris lumbricoides, Patients, Zaria, Incidence, Clinic

Introduction
Ascaris lumbricoides is intestinal nematodes (Round worm) which belong to a super family Ascaridodea. It is the etiological agent of ascariasis which infects man. A person becomes infected by ingesting infective egg in contaminated food, water or from hands
that have become faecally contaminated. Following ingestion is; the larvae hatch in the circulation where they are carried to the heart and lungs (Andrade et al., 2001). They remain in the alveoli for several days, ascends the respiratory tract to the epiglottis where they descend to oesophagus to mature in the intestine.

Ascariasis is a condition due to the infection by helminthes parasite *Ascaris lumbricoides*. One billion people or 25% of the world’s population harbour *A. lumbricoides*, making it the most prevalent helminthiasis of humans. It is usually a mild disease with relatively low morbidity and mortality rates. The high global prevalence of *Ascaris* ultimately results in 20,000 deaths per year, mainly due to intestinal obstruction (Chijoke et al., 2011).

*A. lumbricoides* can caused a myriad of complications in the abdomen. The most common complications of *Ascaris* are intestinal obstruction caused by a worm bolus, which may present as acute or sub acute intestinal obstruction or alternatively intussusceptions. Perforation and gangrene of the small bowel (Refeidi, 2007). Other areas where adult worms could lodge are in the appendix, causing acute appendicitis and appendicular perforation, or in the biliary and pancreatic ducts, causing hepato-pancreatic ascariasis.

Low socio-economic standard tends to affect the border of Ascariasis as the prevailing conditions favour the transmission of *A. lumbricoides* as well as other geo-helminthes. Akogum, 1998, states that transmission of helminthes is sometimes influenced by difference in environment local population and socio-cultural habits; such that prevalence and intensity in two or more adjacent and ecologically similar communities differ especially among school- aged population. According to Gaash (2004) Ascariasis is a common infection in children of tropical countries due to poor sanitation. It is, however, rare in adults. Infection is acquired via faecal-oral transmission through ingestion of food, water, or soil contaminated with embryonated eggs.

*Ascaris* worms are infectious especially in children. Worm masses can cause perforation of the intestine and occasionally obstruction of the bile ducts and pancreatic duct (Braid, 1986). *Ascaris* infection has been controlled in the industrialized world by the provision of safe domestic water supply and sewage. The infection occurs in all ages but most prevalent in children 5-9 years old who are more frequently exposed to contaminated soil than the adult (Franklin and Harold, 1983). *Ascaris lumbricoides* is controlled by preventing soil from becoming faecally polluted by providing and using adequate latrine. Avoiding the use of untreated human faeces as fertilizer (Seo, 1983).

The first symptoms of infection may occur when the Laurie reach the lungs. The patient may develop chest pain, coughing, difficult breathing and inflammation of the lungs. In some cases, the patient's sputum (phlegum) is streaked with blood. This phase of the
A disease is sometimes called Hoeffler's syndrome. It is marked by an accumulation of patients in the lung, tissue and by eosinophilia (an abnormal increase in the number of a specific type of white blood cell). The intestinal phase of Ascariasis is marked by stomach pain cramming, nausea and intestinal blockage in several cases (Henrietta, 2009).

*Ascaris lumbricoides* is said to be infectious in a human body system and causes *Ascariasis*. Therefore the research will discuss about the incidence of *Ascaris lumbricoides* among patient attending Zaria clinic and medical centre.

**Aim and Objectives**
1. To determine the effect caused by *Ascaris lumbricoides* on some patient attending Zaria clinic and medical centre (ZCMC).
2. To determine whether the incidence of *Ascaris lumbricoides* is increasing or decreasing.

**MATERIALS AND METHODS**

**Sample Collection**
1. A clean wide mouth container (empty plastic food container or a potty) was placed in the toilet bowl.
2. The stool was passed into the plastic container or the potty.
3. Small spoonful of the stool was placed into the specimen container by the use of spoon built into the lid of the specimen container (or the wooden stick if supplied).
4. The specimen container was not over filled (the fill line indicate the required amount).
5. The lid of the specimen container was put on and was screwed tightly. The hand was washed with soap thoroughly and warm running water and dry.

**Procedure**
1. 1 drop of 0.85% NaCl was placed on the left side of the slide and iodine (working solution) was dropped on the right side of the slide.
2. Small amount of fecal specimen was taken (The amount picked up on the end of applicator stick when introduce into the specimen) and the stool in the saline and iodine preparation was emulsified thoroughly. (Separate sticks were used for each).
3. 22mm cover slip was placed on each suspension.
4. Both suspensions were scanned systematically with the 10× objective. The entire cover slip area was examined under low power (total magnification ×100).
5. The 40× objective was used for more detailed study. If something suspicious was seen. One third to one half of the cover slip was examined under high dry power (total magnification of ×400).

RESULTS AND DISCUSSION

Data Presentation

From the research conducted, the following results were obtained. The incidence of *Ascaris lumbricoides* in 40 patients within the age of (1-25 years) was obtained.

Table 1: Age Distribution among Patients

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Number of positives</th>
<th>Number of negatives</th>
<th>Total number of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>11</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>6-10</td>
<td>10</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>11-15</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16-20</td>
<td>0</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23</td>
<td>17</td>
<td>40</td>
</tr>
</tbody>
</table>

*Source: Field Work*

Looking at Table 1 above, it shows that; the age-bracket 1-5 years has the highest number of positive cases (11) seconded by age-bracket 6-10 years (10) followed by 11-15 and 21-25 age-brackets (1). On the other hand, 16-20 years bracket has the lowest number of positive cases (0).

Table 2: Percentage Numbers of Samples (Positive & Negative)

<table>
<thead>
<tr>
<th>Age group</th>
<th>No Positives</th>
<th>No Negatives</th>
<th>No of samples</th>
<th>(%) Positive</th>
<th>(%) Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>11</td>
<td>0</td>
<td>11</td>
<td>27.5</td>
<td>0</td>
</tr>
<tr>
<td>6-10</td>
<td>10</td>
<td>1</td>
<td>11</td>
<td>25</td>
<td>2.5</td>
</tr>
<tr>
<td>11-15</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2.5</td>
<td>10</td>
</tr>
<tr>
<td>16-20</td>
<td>0</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>22.5</td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2.5</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23</td>
<td>17</td>
<td>40</td>
<td>57.5</td>
<td>42.5</td>
</tr>
</tbody>
</table>

*Source: Field Work*

The data presented in Table 2 above indicate the percentage number of samples (positive and negative). It shows that; the age-bracket 1-5 years has the highest percentage of
positive cases (27.5%) followed by the age-bracket 6-10 years (25%). The age-brackets 11-15 and 21-25 years have the third highest percentage (2.5%). The age-bracket 16-20 years has the lowest percentage (0%) respectively.

<table>
<thead>
<tr>
<th>Table 3: Gender Distribution of Positive and Negative Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
</tbody>
</table>

The Table 3 above indicates the gender distribution of positive and negative cases. It shows that male patients have the highest number of positive cases (12) and female has the lowest (11). The difference is marginal.

<table>
<thead>
<tr>
<th>Table 4: Percentage of Positive and Negative cases Relative to Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
</tbody>
</table>

The Table 4 above indicates the percentage number of both positive and negative cases in terms of gender. It shows that; male patients have the highest number of percentage (12 positive) with 30% and female with the lowest number of percentage (11 positive) with 27.5% respectively.

**Major Findings**

The study discovered the following:

1. The patients with the age-bracket 1-5 years have the highest incidence of *Ascaris lumbricoides* in the study area;
2. The patients on 16-20 years age-bracket has the lowest incidence of *Ascaris lumbricoides* in the study area;
3. On the basis of gender, the male patients have the highest incidence of *Ascaris lumbricoides* than their female counterparts in the study area.

**Discussion of Findings**

The study discovered that patients with the age-bracket 1-5 years have the highest incidence of *Ascaris lumbricoides* in the study area. This may be as a result of their age
Most children at this level hardly differentiate from what will be harmful to their health and what will not. Therefore, if these children are not adequately cared for by their parent and other care givers, they stand the danger of contacting this disease. The finding is not a surprise considering their age range.

On the contrary, the patients on 16-20 years age-bracket have the lowest incidence of *Ascaris lumbricoides* in the study area. Most of those in this age-range are matured enough to take good care of themselves. They most have learned through their teachers the important tips for healthy living. Therefore, it may not be a surprise to discover the incidence of this disease among these groups to be low.

Moreover, on the basis of gender, the male patients have the highest incidence of *Ascaris lumbricoides* than their female counterparts in the study area. The male gender is often exposed to risk of contracting the disease. Most farmers use local manure and even encourage people to defecate in their farms to boost their yield.

**Conclusion**

In conclusion, ascariasis has a worldwide distribution, the incidence of which is largely dependent on local habits of poor sanitation and hygiene, and in Nigeria, there are reports indicating that the pathological effect of this parasite in children are grave, and thus there is the need to improve sanitation, discourage the use of untreated human faeces as fertilizers and to regularize de-worming exercises.

**Recommendations**

Based on the findings of this study, it is recommended as follows:

1. Infected persons should be treated and adequate attention should be given to awareness, and children, parents and the general public should be educated on the mode of infection and epidemiology of the parasite.
2. Government should provide sufficient fertilizer to famers to avoid the use of untreated human faeces as manure.
3. Proper hygiene should be ensured by avoiding defecation in an open field.
4. Standard cleaned toilet should be provided in every household.

**References:**


