Worm Infestation among Children of Rural Area of Central Punjab

UMAR FAROOQ DAR*, MUHAMMAD SHAHID IQBAL*, MUHAMMAD ZAHID LATIF, MUHAMMAD SHAHID JAVAID*, UJALA NAYYAR*, RAHILA NIZAMI

ABSTRACT

Aim: To determine the frequency of worm infestation among the children of Union Council Mangri, Tehsil Shakargarh, District Narowal.

Methodology: It was cross-sectional descriptive study conducted on 97 children living in Union Council Mangri, Tehsil Shakargarh, District Narowal using non-probability convenient sampling. Pretested questionnaire was used to collect demographic data and microscopic examination of stool for ova and parasite for was done. Study was conducted during months of August-September 2011.

Results: Response was collected from 97 mothers of children under 12 years of age among whom 58 (59.8%) were male and 39 (40.2%) children were female. Stool microscopic examination revealed 12 (12.4%) having worm infestation while no parasite or ova found in 85 (87.6%) children. Among 12 infested children, hookworm ova were found in 5 (41.7%), roundworms 4 (33.3%), tapeworms 3 (25%).

Conclusion: Despite the regular program of deworming the children during mother child week in Punjab, worm infestation still needs response and effective interventions.

Keywords: Worm infestation, children, rural area

INTRODUCTION

Worm infestation remains one of the main problems of child development. This is especially a greater health hazard in developing countries. Worms may be of many shapes and sizes, from microscopic “pinworms” to “tape-worms” that are several feet long. Most of these worms live in the intestinal tract. Any of several types of worms may live in the human body as parasites (infestation), sometimes causing mild to severe illness. These worms could infest the blood, intestines or organs e.g., liver, lungs. The World Health Organization (WHO) estimates that infection with round worms (Ascaris lumbricoides), whipworms (Trichurus trichiura) and hookworms (Ancylostoma duodenale and Necto americanus) with associated morbidity, affect approximately 250 million, 46 million and 151 million people, respectively.

Heavy hookworm burden is the major aetiology for iron deficiency anaemia in young children. Worm infestation in children has been studied in various parts of Pakistan. In a study children were more infected (60%) with helminthic and protozoa than adults (30%) who had only protozoa infection. Prevalence of helminthic infestation in children was 23% in Islamabad, 21.7% in Bagh District and 31% in Quetta. High prevalence of worm infestation in children is reported from northern areas of Pakistan but no study is available central Punjab districts.

The impure drinking water, low socio-economic state, poor personal hygiene and poor sanitation coupled with low literacy rates of parents particularly the mothers are the main causes. Worm infestation is one of the major causes of childhood malnutrition, anaemia, and stunted physical and mental growth, psychosocial problems. It also causes recurrent gastrointestinal and upper respiratory tract infection leading to high morbidity and mortality in children. The reason for being a global public health problem is that helminthic infestation have largely been over looked by clinician, because although worms can cause severe clinical problems, patients rarely report at health centre due to its slow progress of the signs and symptoms.

MATERIAL & METHOD

After approval from ethical review committee of Institute of Public Health, Lahore, a descriptive cross sectional survey was conducted using non probability convenient sampling in Union Council Mangri, Tehsil Shakargarh, District Narowal. According to the 1998 census of Pakistan, population of district Narowal was 1,256,097 of which only 12.11% were urban. 97 children under 12 years of age from a rural community were included in the study without history...
of worm infestation and deworming in previous one year. Demographic data was recorded on structured questionnaire by interviews of the mothers while worm infestation was diagnosed by microscopy. Early morning formed and semi formed stool sample was collected in sterile containers after briefing the mothers. Five slides from each specimen were made after thoroughly mixing the stool specimen to distribute parasites evenly from different portions of specimen. 2mg, (matchstick head amount) was mixed with the physiological saline and with the iodine and smooth thick slides were prepared. Each slide was covered with a cover glass and examined under 10X and 40X objectives with the condenser and closed sufficiently to give good contrast. All slides were examined systematically for helminthic eggs, Roundworm, Tapeworm before reporting “No parasites found”. Data was analysed for description i.e. frequencies and percentages only. Age classification was done to find the distribution.

RESULTS

Out of 97 children, 22(22.6%) were 3-5 years old, 35 (36.1%) were 6-8 years old and 40(41.3%) children were 9-12 years old (Table I). Regarding the sex, 58 (59.8%) were males and 39(40.2%) children were females. Out of 97 children, 12(12.4%) stool microscopy results were found positive while 85(87.6%) children results were negative (Table II). Out of positive results, hookworm ova were found in 5 (41.7%) children and roundworms were found in 4(33.3%) children while tapeworms were found in 3 (25.0%) children (Table III).

Table I: Age distribution of Children (n=97)

<table>
<thead>
<tr>
<th>Age of Children</th>
<th>Frequency</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 years</td>
<td>22</td>
<td>22.6</td>
</tr>
<tr>
<td>6-8 years</td>
<td>35</td>
<td>36.1</td>
</tr>
<tr>
<td>9-12 years</td>
<td>40</td>
<td>41.3</td>
</tr>
</tbody>
</table>

Table II: Results of Stool Microscopy (n=97)

<table>
<thead>
<tr>
<th>Stool microscopy result</th>
<th>Frequency</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>12</td>
<td>12.4</td>
</tr>
<tr>
<td>Negative</td>
<td>85</td>
<td>87.6</td>
</tr>
</tbody>
</table>

Table III: Type of worm infestation (n=12)

<table>
<thead>
<tr>
<th>Worm infested</th>
<th>Frequency</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ova of hookworm</td>
<td>5</td>
<td>41.7</td>
</tr>
<tr>
<td>Roundworm</td>
<td>4</td>
<td>33.3</td>
</tr>
<tr>
<td>Tapeworm</td>
<td>3</td>
<td>25</td>
</tr>
</tbody>
</table>

DISCUSSION

In developing countries most of the people live without access to proper sanitation facilities and are unaware of the importance of basic hygiene practices like hand washing after visiting toilet. Worm infestation is related to poor sanitation and lack of clean drinking water. A cohort of 97 mothers of children was included in the study. Study found that a large proportion (41.3%) of the children was 9-12 years old while rest of them 3-5 years and 6-8 years old. The findings of our study are comparable with the study conducted by Aly et al. who reported that children aged 10-12 years were (40%). This may probably because of more exposure of males as compared to females.

Study revealed that majority (59.8%) of the children was males and 40.2% were females. Study conducted by Mehmood et al. also showed almost similar results that 62.8% children were males and 37.2% were females. Study divulged that stool microscopy was done of all children and only 12.4% children were found positive. The results of our study are better than the study conducted by Ullah et al. who stated that 60.0% children were found positive for worm infestation.

The children whose results were found positive, among them 41.7% children had hookworm, 33.3% children had roundworms and 25% children had tapeworm. Results of the study conducted by Ullah et al. showed that hookworm 3.5% and Tapeworm 1.5% children. Another study conducted by Bisht et al. showed that ova of hookworms were found in 62.5% children. Children who walk in bare foot get hook worm infestation easily.

CONCLUSION

Our study showed that despite the regular program of deworming the children during mother child week in Punjab twice in a year, worm infestation is still prevalent and highly demands active public health response. Effective interventions like health education and school nutrition program may help reduce burden of this silent disease. Government and other relevant organizations must take immediate action to improve sanitation and personal hygiene.

REFERENCES

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