Original Research Article

A study on prevalence of soil transmitted helminthic diseases in tertiary care hospital, Visakhapatnam

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Abstract

Background: The risk of acquiring STH infection and higher prevalence cannot be attributed to just one factor, but is due to the coexistence and amalgamation of various biological, social, behavioral and environmental factors like poverty, substandard living conditions and lack of personal hygiene, both at the individual and the community level. Studies in other tropical countries have postulated that the environment and behavior of local residents influence the rates of infection. **Materials and methods:** During the period of one year (January 2017- December 2017), an attempt was made to study the soil transmitted helminthic infestation in a Tertiary care hospital in Visakhapatnam. The stool samples collected from the General Medicine and Pediatric departments were included in this study. **Result:** Out of a total of 397 stool samples, only 24 samples showed positive results(6.05%). Out of 24 positive stool samples, 15 (62.5%) were positive from females whereas only 9(37.5%) were positive from males, thereby showing a higher prevalence in females. **Conclusion:** The present study on the estimation of the prevalence of various intestinal parasitic infestation reveals that in rural slums, the prevalence rate of intestinal parasites can reach as high as 67–100 %. Scarcity of basic infrastructure, unhygienic environment, consumption of improperly cooked contaminated food and contaminated water may contribute to high prevalence of intestinal parasites as suggested by Fernandez *et al.* (2002) in rural children living in and around Chennai.

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INTRODUCTION

The soil-transmitted helminths (STH) *i.e.* hookworms (*Ancylostoma duodenale* and *Necator americanus*), *Strongyloides stercoralis* and *Trichuris trichiura* are among the most common gastrointestinal worm infestations in humans in both tropical and subtropical countries. The World Health Organization (WHO) has estimated that more than two billion of the world's population is infected with STH[1]. A number of studies have suggested that even a moderate intensity of infection may result in delayed physical growth and impaired cognitive development, particularly among children of school-going age[2,3] and STH infections are considered a leading cause of sickness, absenteeism and disability adjusted life years (DALYs) lost[4]. In India, the reported prevalence of STH ranges from 12.5-66 per cent, with varying prevalence rates for individual parasites[5]. The risk of acquiring STH infection and higher prevalence cannot be attributed to just one factor, but is due to the coexistence and amalgamation of various biological, social, behavioral and environmental factors like poverty, substandard living conditions and lack of personal hygiene, both at the individual and the community level. Studies in other tropical countries have postulated that the environment and

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behaviour of local residents influence the rates of infection[6]. Hookworm infection is also a major concern for women's health (WHO 1994). The intensity of hookworm infection is directly related to anaemia (Lwambo *et al.* 1992). Climate, socio-economic, educational, environmental and sanitary conditions may influence the prevalence and severity of hookworm infection in varied age and sex of the host.

MATERIALS AND METHODS

During the period of one year (January 2017- December 2017), an attempt was made to study the soil transmitted helminthic infestation in a Tertiary care hospital in Visakhapatnam. The stool samples collected from the General Medicine and Pediatric departments were included in this study. The cases included individuals of both sexes and all age groups. The stools collected were concentrated using the formol–ether sedimentation technique, screened using conventional iodine and saline wet mounts, and examined by direct microscopy.

RESULTS

Out of a total of 397 cases suspected to have helminthiasis, 211 were from female patients and 186 were from male patients. Out of 397 cases, 284 were inpatients whereas 113 were out-patients. Out of a total of 397 stool samples, only 24 samples showed positive results(6.05%). Out of 24 positive stool samples, 15 (62.5%) were positive from females whereas only 9(37.5%) were positive from males, thereby showing a higher prevalence in females.

TABLE 1: Age and sex wise distribution of stool positive cases

AGE	MALE	FEMALE	TOTAL
0-10 YRS	1	0	1
11-20 YRS	0	0	0
21-30 YRS	0	4	4
31-40 YRS	1	2	3
41-50 YRS	1	3	4
51-60 YRS	1	1	2
61-70 YRS	4	4	8
71-80 YRS	0	0	0
81-90 YRS	1	1	2
TOTAL	9 (37.5%)	15 (62.5%)	24 (100%)

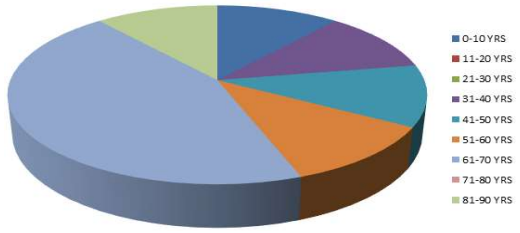

Figure 1:

Also, among the 24 stool positive cases, 16 belonged to the rural communities, whereas only 8 belonged to the urban community; thereby, showing a higher prevalence among the rural population.

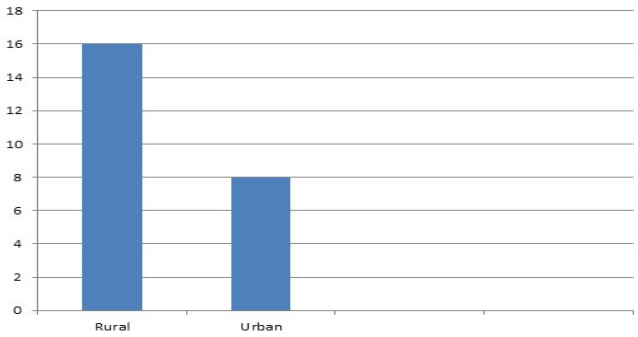

Figure 2:

DISCUSSION

Majority of population in India belongs to the lower socio-economic group. The present study reveals that in rural areas, the incidence rates can increase to a level as high as 6.05%. Hence, intestinal parasitism represents a major public health problem. Majority of population in India belongs to the lower socio-economic group; The present study on the estimation of the prevalence of various intestinal parasitic infestation reveals that in rural slums, the prevalence rate of intestinal parasites can reach as high as 67–100 %. Scarcity of basic infrastructure, unhygienic environment, consumption of improperly cooked contaminated food and contaminated water may contribute to high prevalence of intestinal parasites as suggested by Fernandez *et al.* (2002) in rural children living in and around Chennai.

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