



Socio – Demographic Characteristics and Clinical Findings associated with Prevalence of Intestinal Parasitic Infection in patients attending Tertiary Care Hospital in Lucknow

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ABSTRACT

Intestinal parasites are endemic worldwide and have been described as constituting the greatest single worldwide cause of illness and disease. Intestinal parasitic infections are responsible for considerable morbidity and occasional mortality among infected population throughout the world. The present study was conducted in the Department of Microbiology of a tertiary care Hospital in Lucknow, India. Samples were collected after taking informed consent a pre-designed questionnaire eliciting socio-demographic data such as age, sex, dietary habits, education and environmental factors such as hygiene/sanitation and water supply. A total of 640 stool samples were examined microscopically Out of all the samples examined, 139 samples were found to be positive for atleast one parasite. This study analyzed demographic factors such as poverty, illiteracy, poor hygiene, lack of access to potable water affecting the prevalence of intestinal parasites. The findings of the study showed that the risk factors associated with intestinal parasitic infections are correlated positively with decreased rates of infection.

Keywords: *Demographic profile, Parasitic load and Clinical co-relation of associated parasitic infection.*

INTRODUCTION

The intestinal parasitic load is considered as a general indicator of the socio-economic status of the region ^[1]. One quarter of the world's population is infected and about 80% of all deaths annually are due to parasitic diseases ^[2]. In developing countries, 3.5 billion people are affected, and 450 million are ill as a result of parasitic infection ^[3].

Intestinal parasites are widely prevalent in third world countries due to poverty, poor living conditions as well as people in over-crowded areas with poor environmental sanitation, improper garbage disposal, poor hygiene and lack of access to potable water ^[4, 5]. These factors are the causes of a major proportion of the burden of disease and death in developing countries ^[6].

Amoebiasis, Giardiasis, Ascariasis, Hookworm infection, and Trichuriasis are responsible for high levels of morbidity, mortality and nutritional deficiencies including iron deficiency anemia, seizures, portal hypertension, chronic diarrhea and impaired physical development in patients [7,8,9].

The objective of the study was to find out the prevalence of the Intestinal parasitic infections and their associated risk factor.

MATERIAL AND METHODS

The present study was conducted in the Department of Microbiology, Career Institute of Medical Sciences and Hospital, Sitapur Hardoi Bypass Road Lucknow. Study was carried out from January 2016 to August 2016. The study was included in information pertaining to age, sex, marital status, occupation, socio-economic status, food hygiene, number of pets owned by the households, present illness, duration of illness, past treatment history was obtained from each patient using a structured questionnaire. Informed/written consent was obtained from all the patients including parents/guardians of the patients. A total of 640 samples were collected Out of which, 176 samples were collected from the indoor patients and 464 were collected from outdoor patients. Naked eye examination was

carried out in each stool sample All samples were subjected to routine microscopic examination by normal saline and lugol’s iodine wet mount preparation, modified Ziehl-Neelsen staining including concentration and floatation technique.

RESULTS

Total 640 samples were included in present study, out of which 139 (21.7 %) revealed presence of parasites (fig no.1).

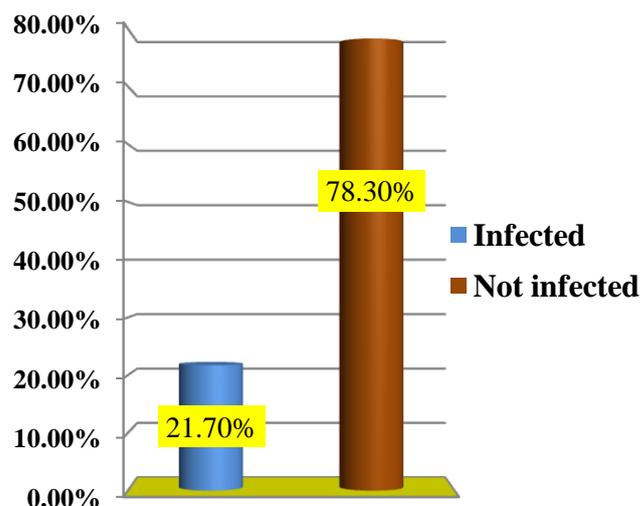


Fig no.1: Prevalence of intestinal parasites

Table no.1: Frequency of detection of parasite from stool specimen (N=139):

Highest number of detected intestinal parasite was *E.histolytica* followed by *B. homini*, *G. lamblia*, *A. lumbricoides*, *A. duodenale*, and *H. nana* (Table no.1 fig no.2)

Name of parasite	No. of positive sample	Percentage %
<i>Entamoeba histolytica</i>	59	42.4
<i>Blastocystis hominis</i>	41	29.4
<i>Giardia lamblia</i>	17	12.2
<i>Ascaris lumbricoides</i>	9	6.4
<i>Ancylostoma duodenale</i>	7	5.0
<i>Trichomonas hominis</i>	2	1.4
<i>Hymenolepis nana</i>	2	1.4
<i>Enterobius vermicularis</i>	2	1.4

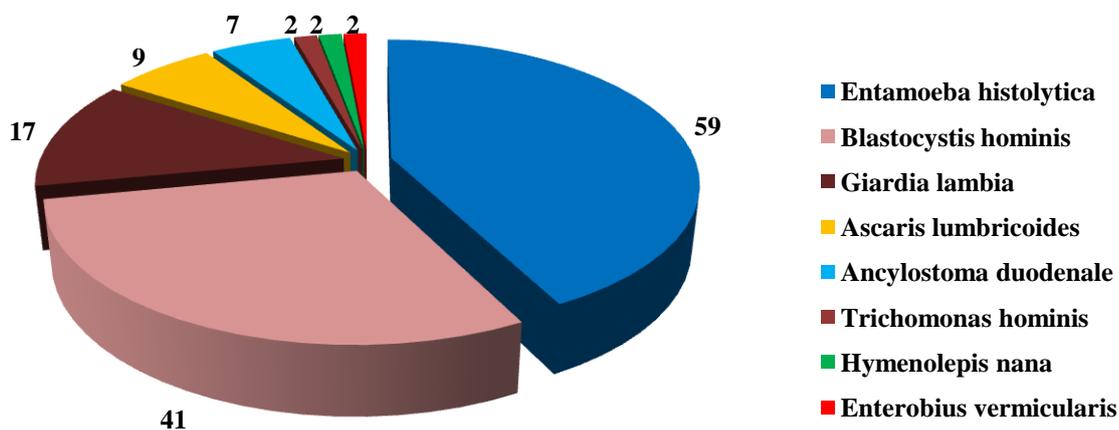


Fig no.2 Frequency of detection of parasite

Table no.2: Gender wise distribution of parasitic infection

Sex	No. of samples	No. of Positive sample
Male	314	37
Female	326	102

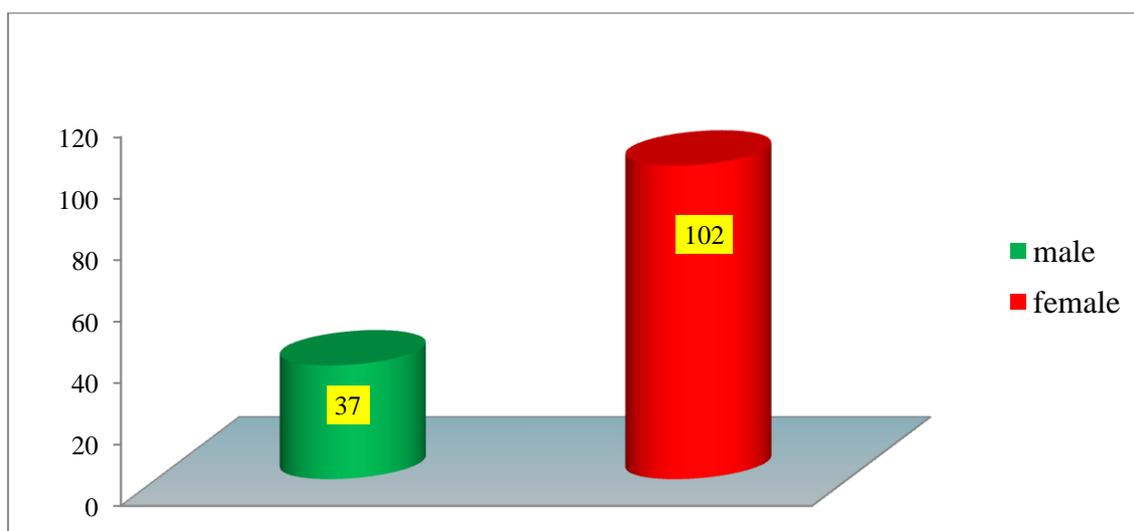


Fig no.3 Gender wise distribution of parasitic infection

Table no.3: Clinical finding associated with intestinal parasitic infection (n=97)

Clinical Feature	Number	%
Diarrhoea	108	77.6
Abdominal pain	85	61.1
Nausea	83	59.7
Vomiting	45	33.3
Mucus	39	28.0
Bloody stool	22	15.8
Body ache	17	12.2
Constipation	9	6.4

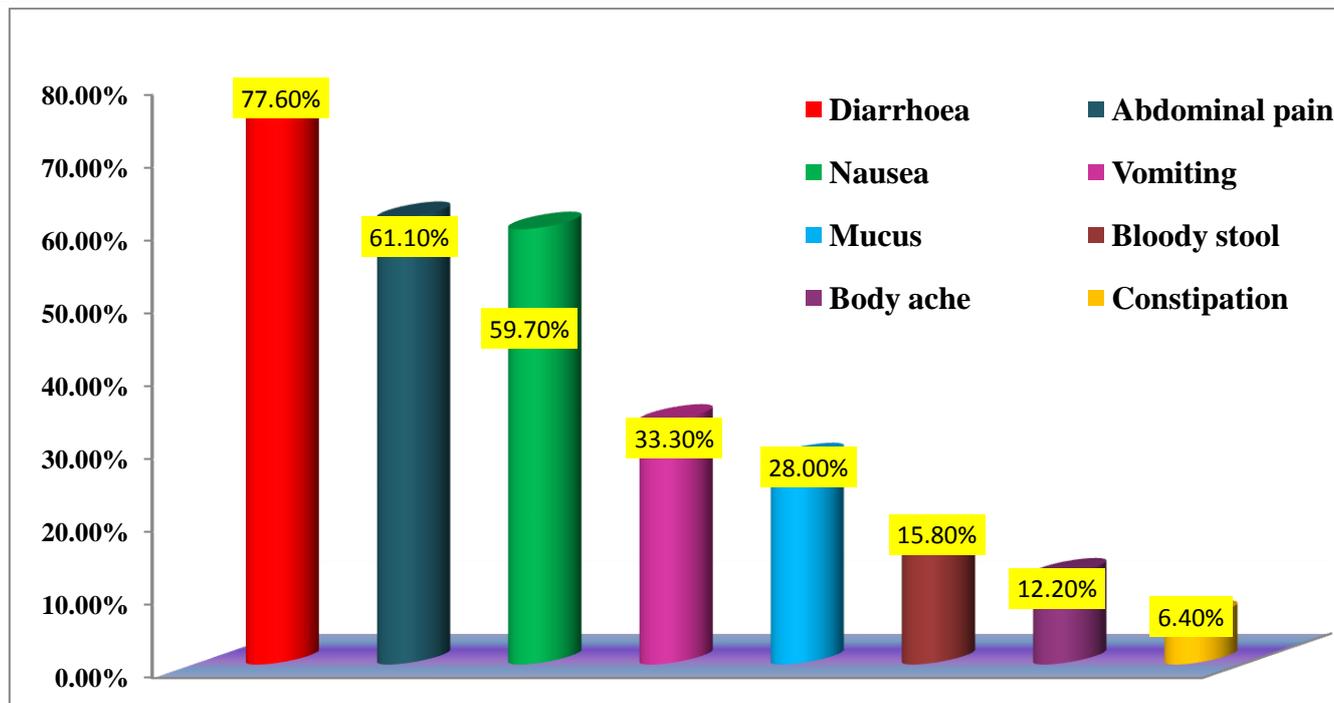


Fig no.4: Clinical finding associated with intestinal parasitic infection (n=139)

Table no.4: Season wise distribution of intestinal parasitic infection (n=640):

Month	Number of samples	Number of parasites
January	11	1
February	22	3
March	82	11
April	71	9
May	103	21
June	119	26
July	101	36
August	131	32
Total	640	139

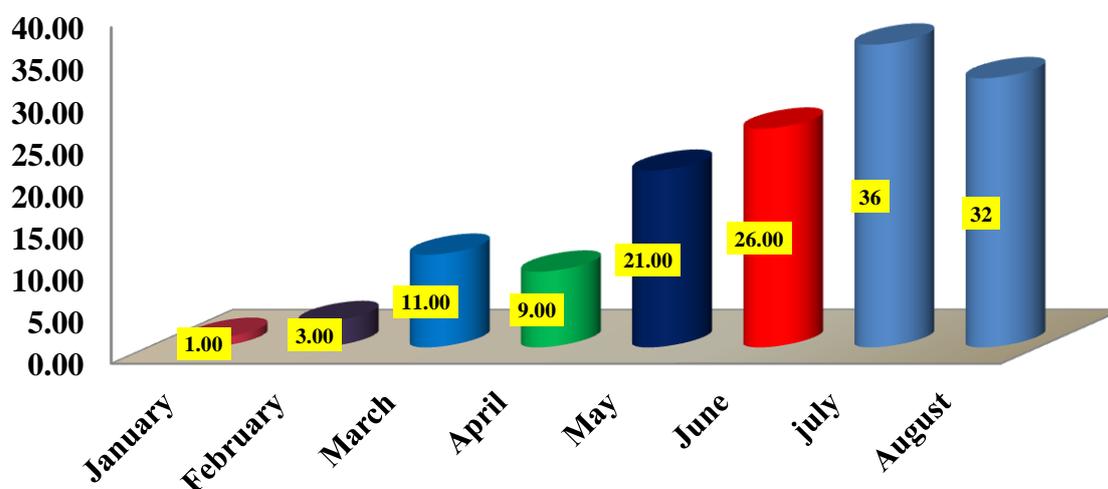


Fig no. 5: Season wise distribution of parasite.

Socio – Demographic Characteristics (n= 139)

Demographics	No. (%)
Level of education	
No education / Primary school	92 (66.1)
Secondary school, high school and more	47 (33.8)
Source of water	
Municipal water	21 (15.1)
Borehole	118(84.8)
Type of toilet	
Open fields	14 (10)
Private / Sharing	125(89.9)
Hand Washing With Soap	137(98.5)
Animal contact	
YES	114(82)
NO	25(17.9)
Take bath (Once a day)	
YES	78(56.1)
NO	61 (43.8)

DISCUSSION

In the present study parasitic infection was seen in 139 (21.7%) patients out of the total 640 samples. Studies from different parts of India ^[10-13] and outside India ^[14-17] have reported a parasite prevalence rate of 25 to 70% this might be due to improper waste disposal, unsafe water supply, seasonal and geographic variations.

Low prevalence in present study might be due to improved sanitary practices, reduced slum areas, improved person hygiene, increased awareness, health education and seasonal variations. The prevalence of parasitic infection was more common in females as compared to that in males

other studies also showed similar results with predominance of females ^[18-19]. This could be due to poor hygienic practice of hand washing and habit of nail growing as a fashion statement.

Entamoeba histolytica (42.4%) and *Giardia lamblia* (12.2%) were the most common intestinal parasites among our study participants. Both can be transmitted orally by drinking water and both are environmental contaminants of the water supply. The higher infection with these parasites may be attributed to poor sewerage system in the community, and the fecal contamination of ground water, the ground water was the major source of drinking water in the region.

Similarly, higher helminthic infection, particularly by Hookworm and Ascaris, in this study suggests high soil contamination with infective stage of helminths. This report seems similar to that of another study and might be due to rapid, unplanned urbanization, open defecation and other unhygienic conditions and lack of health awareness^[20].

In the present study Seasonal variations also affect the prevalence of parasitic infection. Summer and rainy season facilitate conditions and risk factors to intestinal parasitic infections. This may be due to faeces are washed into nearby streams and open sewers that flow along the shanties in the overcrowded urban informal settlements, and can lead to contamination of drinking water, hence, increased infections and higher prevalence.

In the present investigation the nausea, abdominal pain and diarrhoea are the most common clinical features which are associated with parasitic infection similar to other study^[21].

CONCLUSION

This study shows that in the study population the risk factors for intestinal parasitic infections are decreased such as source of safe drinking water supply, decreased in open defecation habit, no hand washing after defecation, no wearing of footwear's.

To conclude, the low prevalence of intestinal parasitic infections in this study suggests is due to increased awareness and improvement of sanitary practices, personal hygiene safe drinking water supply, Patients early treatment seeking behavior and health education in urban population in and around Lucknow. The peculiar observation regarding comparatively increased prevalence in female population could be due to lacking awareness of hand hygiene and practice of growing of nail as a fashion statement.

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