



RESEARCH ARTICLE



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## Pattern of Intestinal Parasitic Infections in Patients Visiting To Rural Tertiary Care Teaching Hospital in Pune

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### Abstract

**Aim :**To determine the predominant intestinal parasitic infections among all age group of patients attending tertiary care teaching hospital  
**Materials & methods :** A total of 500 stool samples were collected from all age groups and examined by routine naked eye and microscopic examination.

**Results:** 62(12.40%) Stool samples showed presence of ova/cysts of protozoa or helminths. Protozoal cysts or trophozoites were found in (64.51%) while helminthic eggs were found in 22(35.38%) of positive samples. In protozoal infection, *Entaetaemoeba histolytica* was found 55% followed by *Giardia lamblia*. 63.63 % samples were positive for *Anchylostoma duodenale* Presence of parasitic infection was predominantly seen in adults.

**Conclusion:** *Entaetaemoeba histolytica* is a predominant protozoal infestation and the *Anchylostoma duodenale* amongst the helminthes. Low positivity of the specimen as compare to other study indicate improved awareness of hygiene in the society. Positivity was seen more in male (15.4%) patient than female (10%).

**Keywords:** Intestinal parasites, protozoa, helminthes ,rural community

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## INTRODUCTION

Intestinal parasitic infections are highly prevalent in developing countries like India. <sup>1</sup>These infections are distributed throughout the World, with high prevalence rate in low socio-economic communities in the tropic and subtropics. Most common intestinal parasitic infections all over the world observed are amebiasis, ascariasis, trichuriasis and hookworm. <sup>2</sup>

*Ascaris lumbricoides*, *Trichuris trichiura* and hookworms, collectively referred to as soil-transmitted helminths, are the most common intestinal parasites. *Ascaris lumbricoides* is the largest and the most common helminth parasitizing the human intestine and currently infects about 1 billion people worldwide. *Hymenolepis nana* is the most common parasitic cestode prevalent globally. *Giardia duodenalis*/*Giardia intestinalis*, previously known as *Giardia lamblia*, causing giardiasis, is the most prevalent protozoan parasite worldwide with about 200 million people being currently infected.

Parasitic intestinal infections are important causes of morbidity and mortality in the developing world. <sup>3</sup>It can lead to complications like anaemia, reduced physical growth, mental retardation, abdominal colic cholecystitis & pancreatitis. It causes the detrimental effects like poor cognitive performance and physical growth. The purpose of this study was to find out the frequency of the intestinal parasitic infection

## MATERIAL & METHODS:

This study was carried out in the Department of Microbiology for a period of 6 months. A total of 500 stool samples were collected from all age groups and examined by routine naked eye and microscopic examination. Five hundred patients with symptoms suggestive of parasitic infections coming to Hospital for whom stool examination for parasites was advised by clinicians were also included in the study and stool samples for bacterial cultures were excluded. The patients were provided wide mouthed clean, dry, properly labeled plastic container for collection of samples and recommend 5grams of solid or 10ml of liquid stool. The stool samples were examined within 1-2 hours of collection. Macroscopic examination was done to look for structures like proglottids, scolices, adult tapeworm, enterobius, ascaris, trichuris or hookworm.

Unstained saline wet mount preparation was done to detect protozoal trophozoites and helminthic eggs or larvae. Iodine wet mount was done to detect ova/ cysts.

## RESULTS:

Out of total 500 stool samples examined, 62 (12.40%) revealed presence of parasites. There was no statistically significant difference in the percentage of intestinal parasites according to the age or gender of

the patients (table-1). Positivity was high in male (15.4%) patient than female (10%).

Category	Total tested	Positive	Percentage(%)
Age <15 years	218	10	4.58
Age >15years	282	52	18.43
Male	220	34	15.4
Female	280	28	10

**Table 1:** Age and gender wise distribution of positive cases (n=62)

\* P value for comparison between age groups (Chi square test)

Sr no.	Type of parasite	No. of parasite	Percent age
<b>Protozoa</b>			
1	<i>Entamoeba histolytica</i>	2 2	55%
2	<i>Giardia lamblia</i>	1 8	45%
<b>Helminth</b>			
1	<i>Anchlyostoma duodenale</i>	14	63.63 %
2	<i>Ascaris lumbricoides</i>	6	27.27 %
3.	<i>Strongyloides stercoralis</i>	2	9 %

**Table 2:** Showing the various parasites detected in the stool specimens

The distribution of various parasites showed in table 2. Stool samples showed presence of ova/cysts of protozoa or helminths. Protozoal cysts or trophozoites were found in (64.51%) while helminthic eggs were found in 22(35.38%) of positive samples. In protozoal infection, *Entamoeba histolytica* was found 55% followed by *Giardia lamblia*. 63.63 % samples were positive for *Anchlyostoma duodenale*. Presence of parasitic infection was predominantly seen in adults.

## DISCUSSION

In the present study parasitic infection was seen in 62 (12.4%) patients. Studies from different parts of India and outside India have reported a parasite prevalence rate of 25 to 70%. 4-6 High incidence of *Entamoeba histolytica* followed by *Giardia* is common observation seen in Indian studies. The incidence of amebiasis varies from 1-14 % and giardiasis 2-19% depending on the areas studied and methods used in the detection of the protozoa. <sup>7</sup> In our study, the incidence of *Anchlyostoma duodenale* was observed high amongst the helminthes. All these patients belong rural areas. For finding underlying cause of high infection, more samples (population survey) from the respective areas required to be tested. Low prevalence of *Ascaris lumbricoides* & *Strongyloides stercoralis* had been observed in this study. When compared with other study, this could be due to variation in geographical distribution of different parasites, effective health

education and public health services in the study area. 8Prevalence rate in our study was low and is suggestive of better awareness of personal hygiene and environmental sanitation in the study population. Our result showed high infection among males .However; the sex predominance for parasite infection is still not confirmed. Some report higher rate in females 9 and some in females 10, 11. The others reported similar rate in both sexes12 Stool examination for parasitic ova, cysts, trophozoite and larvae remains the gold standard for the laboratory diagnosis for IPI's.

Ascaris and Giardia, found in the current study, is due to the common environmental factors which may affect their transmission. Our diagnostic sensitivity may have improved if we had taken three consecutive stool samples but this was not done. Prevalence rate in our study was low and is suggestive of better awareness of personal hygiene and environmental sanitation in the study population.

*Entaetaemoeba histolytica* is a predominant protozoal infestation and the *Anchylostoma duodenale* amongst the helminthes. Low positivity of the specimen as compare to other study indicate improved awareness of hygiene in the society.

#### CONCLUSION

*Entaetaemoeba histolytica* was the predominant protozoal infestation *Anchylostoma duodenale* was predominant amongst the helminthes in our study. Low positivity of the specimen as compare to other study indicate improved awareness of hygiene in the society.

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