



INTESTINAL PARASITES AS PUBLIC HEALTH PROBLEM AMONG PATIENTS ATTENDING OPD/IPD IN TERTIARY CARE HOSPITAL IN AMBALA

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ABSTRACT

Intestinal parasitic infections are among the most common human infections endemic throughout the world including India. About 25% of world's population suffers from one or more kinds of intestinal parasitic infections. The present study was intended to characterize the parasitic spectrum involved in intestinal infections.

METHOD: To determine the prevalence of intestinal parasites in patients attending Maharishi Markandeshwar institute of medical sciences and research, the stool samples were processed as per hospital protocol.

RESULTS: The study was carried out within the period of 7 months from June 2015 to Dec 2015. Out of total of 759 patients examined, 19.1% were infected with intestinal parasites. (18.22%) were males and (20.71%) were females. Incidence of protozoal isolates were Giardia intestinalis 77(10.1%), Entamoeba histolytica 56 (7.37%) and among prevalent helminth were Ascaris lumbricoides 10(1.31%), Taenia 2(0.26%), T. Trichura (0.13%) respectively.

CONCLUSION: Gastrointestinal disorders caused by various protozoal parasites impose a great burden on human populations in the developing world, particularly among children. Routine stool examination and provision of health education are required for early medical intervention.

KEYWORDS : Intestinal parasite, Giardia intestinalis, stool parasite

INTRODUCTION:

Intestinal parasitic infections caused by intestinal helminthes and protozoa are among the most prevalent infections in humans endemic throughout the world especially India. About 3.5 billion individuals are infected with intestinal parasites and nearly 450 million suffer from clinical morbidity (WHO, 2000)¹. The protozoal parasites are most common cause of GI disorders compared to helminthes especially in developing countries. Being single celled the protozoal parasites can rapidly multiply inside the human body causing grave infections. Common symptoms associated with it include abdominal discomfort, vomiting and dysentery. These infections are associated with poor sanitary habits, lack of access to safe water and improper hygiene, thereby occurring wherever there is poverty².

Effect of these intestinal parasitic infections to the growing child's development is detrimental. There is good evidence that repeated enteric infections, usually but not always linked to attacks of diarrhea, can lead to malnutrition, with long-term adverse effects on development³. The need of the hour is that we should have enough epidemiological information on the prevalence of gastrointestinal protozoal infections and their risk factors in different localities, which are prerequisite to develop quality control measures. Against this background, the present study was undertaken to investigate the incidence of gastrointestinal parasitic infections and associated demographic and environmental factors in Ambala.

MATERIAL AND METHODS

Study Area: The study was carried out in a tertiary care hospital in MMIMSR Ambala.

Study Population: Study included the patients of pediatric age group (0-18 yrs) attending the OPD and IPD whose stool examination was advised by clinician.

Study Period: Study period was 7months, from June 2015 to Dec 2015

Collection and Processing of specimens: Stool samples were collected from each patient into a clean wide-mouthed container. After doing Macroscopic examination, Direct Microscopic examination was done. The samples were examined microscopically for ova and cysts of parasites using Saline and Iodine mounts on grease-free slides (K D Chatterjee 2009).

RESULTS:

A total of 759 stool samples were received for stool routine examination. Out of 759 cases of intestinal parasites, 146(19.23%) were positive [Table 1]. Among the positive cases, female cases

64(20.71%) were in predominance to male cases 82(18.22%) [Table 2].

Table 1: Total No Of Cases With Percentage (%)

Total No of cases	Positive cases	Negative cases
759	146(19.23%)	613(80.76%)

Table 2: Sex Distribution Of Cases

S.No.	Gender	No. of subjects	No. of positive cases
1	Males	450	82(18.22%)
2	Females	309	64(20.71%)
3	Total	759	146(19.23%)

Male to female ratio was 1.45:1. Highest prevalence was seen in the month of July, whereas lowest prevalence was in the month of june [Table 3]

Table 3: Seasonal Distribution Of Cases

S No	Month	No of subjects (n=759)	No of Positive cases (n=146)
1	June	78	19(24.35%)
2	July	137	28(20.43%)
3	August	124	25(20.16%)
4	September	108	21(19.44%)
5	October	81	13(16.04%)
6	November	108	15(13.88%)
7	December	123	25(20.32%)

On wet mount examination of stool samples maximum percentage of intestinal parasites was of Giardia lamblia followed by Entamoeba histolytica, Ascaris lumbricoides, Taenia spp and Trichuris trichura [Table 4].

Table 4: Distribution Of Intestinal Parasites

S No	Parasite	Total No (%)
1	Giardia lamblia	77(10.1%)
2	Entamoeba histolytica	56(7.37%)
3	Ascaris lumbricoides	10(1.31%)
4	Taenia spp	2(0.26%)
5	Trichuris trichura	1(0.13%)

DISCUSSION:

Intestinal parasitic infections constitute a global health problem in various developing countries mainly due to fecal contamination of water and food⁴. The incidence rates of intestinal parasitic infections and type of parasite exhibit wide variation from country to country, between geographical areas, communities and even seasonal

variations also occurs⁵.

The current study revealed prevalence of intestinal parasites to be 19.23%, which is more than the rate of parasitism studied by Beena Jad et al in the same area in the year 2015⁶ and Natasha et al in the year 2017⁷. The dispersed variation might be due to the heterogeneity in factors like quality of drinking water supply, sanitation and environmental conditions. The percentage prevalence in the present study is in accordance with Kumar Manochitra et al 2016⁸. It is known that the overall prevalence of these parasites, in India ranges from 12.5- 67% as reported previously.

The data of present study showed *Giardia* was the most common protozoa identified (10.1%) which is in accordance with many studies conducted previously^(9,10,11) followed by *Entamoeba histolytica* (7.37%), *Ascaris lumbricoides* (1.31%), *Taenia* spp (0.26%) and *Trichuris Trichura* (0.13%). The same pattern was seen in 2010 in a study done by Sehgal R et al¹². It gets transmitted by faeco-oral route by drinking contaminated water as it is common environmental contaminant of water supply. *Giardia* cysts have been isolated from water supplies in different parts of the world⁽¹³⁻¹⁷⁾. Infection with *Giardia lamblia* and *Entamoeba histolytica* may result in serious health problems including iron deficiency anaemia, malnutrition in children¹⁸. The most common helminth isolated in our study was *Ascaris lumbricoides* leading to intractable anaemia in rural people who are accustomed to walking barefoot in contaminated soil. The global ranking of soil transmitted helminthes (STHs) by WHO, states that *Ascaris* is the most frequent parasite followed by Hookworm and *T. Trichuris*⁵. In the guideline by the US Department of Health, 2013, it is suggested that people from developing countries of Asia, Africa, and others are highly susceptible to parasitic infestations, but among the, STH is the most important and to be looked after seriously as they lead to significant illness and even death¹⁹.

In current study, females showed higher rate of infection than males which is in accordance to observation made by Kumar Manochitra et al⁸ who observed that GI infections were more common in females as compared to males.

Seasonal studies of human parasitic infections depicted the highest number of cases in June (24.35%), July (20.43%), August (20.16%), December (20.32%). It has been reported to be maximum during the rainy season because of the availability of favorable conditions for growth of microbes and possibility of opportunistic infection. Seasonal variation in prevalence has also been reported in developed and developing countries in temperate and tropical regions²⁰

CONCLUSION:

Our study sheds some light on the current pattern of distribution of intestinal parasites, its burden on the health care system and its deteriorating effect on the society as a whole. The infections were found to be due to low standards of personal hygiene, faulty techniques of hand washing, non-usage of sanitary latrines, poor sanitation and illiterate population. Thus emphasizing the need for mass deworming programs, safe drinking water, personal hygiene education to students and parents. These multiple interventions will result in lowering infection rate but would require time to time surveys and taking appropriate full proof preventive measures to prevent intestinal parasitic infections.

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