



Intestinal Parasitic infection in Males of urban areas of district Bareilly in different age groups

Dharmendra
Department Of Zoology, GU(PG) College, Bheri, Bareilly
Corresponding Email: zoologyss24@gmail.com

Abstract

Pathogenic protozoans, helminths, and nematodes are the primary reasons for diarrheal, vomiting, and stomach obstructions among babies and younger children. However, enteric helminths are now not viewed as serious sickness agents as the contamination is typically asymptomatic. The intestinal parasite's highest prevalence (34.78%) was recorded in the 5-15 years age group. The prevalence of Ascaris infection was highest (10%) in Urban areas of district Bareilly followed by Entamoeba (8.39%), pinworm (7.74%), and Giardia (3.87%) and hookworm (0.65%).

Key Words- Pathogenic Parasites, Male Population, Urban, Bareilly.

Introduction

Gastrointestinal pathogenic contamination is a common problem affecting greater than a quarter of the population in the course the world. Intestinal pathogens such as Protozoans, Helminths, Nematodes, and haemoparasites are said to be amongst the most devastating illnesses for humans, home animals, and livestock. Parasites of the gastrointestinal tract are among the most frequent and broadly distributed animal parasites of humans. Most enteric parasites have hooked up a well-balanced host-parasite relationship with the human host; the people in flip also tolerate these parasites. Light contamination is frequently harmless however an expansion in parasitic load at the same time will increase disease. The parasites may additionally be responsible for irritating the intestinal mucosa, inflicting irritation and ulceration, or may additionally produce toxic substances. Pathogenic protozoans, helminths, and nematodes are the primary reasons for diarrheal, vomiting, and stomach obstructions among babies and younger children. However, enteric helminths are now not viewed as serious sickness agents as the contamination is typically

asymptomatic. However, it is estimated that over 3000 million instances of the diseases exist worldwide either as single or as blended infections.

Material and methods

The present work was conducted to record parasitic infection of the gastrointestinal (GI) tract in rural and urban populations of the Bareilly district. For this purpose, the following methodology was adopted. These samples were also collected from different pathological labs situated in urban and semi-urban areas of Bareilly. The urban area of Bareilly includes Gangapur, Madhi Nath, Subhash Nagar, Izatnagar, and Civil Lines.

Direct Faecal Smear (DFS) and Formalin, Ether Concentration Technique (FECT), were compared using one and two tool samples collected on two separate days for the diagnosis of parasitic infections. 5 gms. of fecal matter was suspended in about 5.0ml. of normal saline and it was stirred well with a glass rod to make a homogenous suspension. A drop of the suspension was kept on a slide by maintaining a 37°C temperature. A drop of saline suspension or watery stool was mixed with one drop of Gram's iodine and a coverslip was applied. The iodine reagent stained the cystic forms of protozoa and the eggs of the helminth parasites and the morphology of the parasite became distinct for identification.

Results

Amongst male age group of 0-5 years (40), 5-15 years (115); 15-30 years (55); 30-50 years (60), and above 50 years (40) totaling 310 samples of infection was found in 14, 40, 13, 10 and 5 samples, respectively with *Entamoeba* (4, 10, 3, 6 and 3), *Giardia* (3, 5, 1, 2 and 1) and *Ascaris* (4, 10, 10, 5 and 2). Hookworm infection was detected only in 2 samples in the age group of 5-15 years, pinworm infection was detected only in samples from the age group of 0-5 years, 5-15 years, and 15-30 years in 5, 18, and 1 sample respectively (Table 1).

Out of 310 samples of male individuals from urban areas of district Bareilly 82 (26.45%) were positive for parasitic ova/cysts. Multiple infections were recorded in 8 samples out of a total of positive cases. The intestinal parasite's highest prevalence (34.78%) was recorded in the 5-15 years age group. The prevalence of *Ascaris* infection was highest (10%) in Urban areas of district Bareilly followed by *Entamoeba* (8.39%), pinworm (7.74%), and *Giardia* (3.87%) and hookworm (0.65%).

Discussion:

The present study has documented a very high prevalence of gastrointestinal (GI-) parasites

in the urban (M: 26.45; F: 27.85) district Bareilly, Rohilkhand Division, Uttar Pradesh. The urban area of district Bareilly includes Gangapur, Chaudhary Talab, Subhash Nagar, Madhinath, Rajendra Nagar, and Civil Lines. During the present study, the stool samples in the age group of 0-5, and 5-15 had a maximum frequency of protozoan and helminth parasites. The incidence of amoebiasis and ascariasis was more common as compared to giardiasis, hookworm, and pinworm infection. (Table 1).

Similarly, other studies (Norhayati *et al.*,2007) have focused on estimating the number of intestinal parasitic (prevalence) infections in men in Malaysia and have reported that intestinal protozoans were *Entamoeba histolytica* and *Giardia details. Blastocystocytis, Cryptosporidium* species and *Isopora* species have been identified as causes of diarrhea in children and immunocompromised patients. In other countries like the USA, the seasonal prevalence of intestinal parasitic infection has been recorded and found to be lowest (22.27%) in winter and gradually decreased in the spring with a peak of 36.43%. (Astal,2004).

Similar studies on intestinal protozoan parasites were carried out where the maximum prevalence of infection was recorded for rural areas (50.5%) as compared to urban areas (44.1%) in Nigeria. Thus, an insignificant change ($P>0.05$) was statistically recorded (Ikeh *et al.*,2006).In the present study, out of 310 samples of male individuals from urban areas of district Bareilly, 82 (26.45%) were positive for parasitic ova/cysts.

Earlier, studies (Saifi and Wajiullah, 2001) on parasitic infection were carried out on primary school children (367) from Ujhani district Badaun (U.P.). This study too revealed that out of 38.4% of intestinal protozoan parasites, *Entamoeba histolytica* infection was the highest (15%). Intestinal helminth infections are highly prevalent throughout the developing world. The infection level is almost stable because of the lack of sanitation waste disposal and proper hygienic practices. However, under appropriate conditions, geohelminth infections can remerge in areas of low prevalence (WHO, 1987).

In the present study, the peak prevalence of *Ascaris* was found in young people in urban areas contrary to this Markell *et al.* (1992) found the peak prevalence of *Ascaris lumbricoides* and *Trichuris trichiura* as well as other parasites in three years of age, where stool samples were collected at approximately 6 to 9-month intervals.

TABLE – 1

INTESTINAL PARASITIC INFECTION IN MALES OF URBAN AREAS
OF DISTRICT BAREILLY IN DIFFERENT AGE GROUPS

Age Group (in years)	No. of Samples	No. of infected samples (%)	Urban Area					Multiple infections
			Protozoan Parasites		Helminth Parasites			
			<i>Entamoeba histolytic</i>	<i>Giardia lamblia</i>	<i>Ascaris lumbricoides</i>	<i>Hookworm (Ancylostoma)</i>	<i>Pinworm (Enterobius)</i>	
0-5 yrs.	40	35.00% 14	4	3	4	-	5*	2
5-15 yrs.	115	34.78% 40	10	5	10	2	18*	5
15-30 yrs.	55	23.64% 13	3	1	10*	-	1	2
30-50 yrs.	60	16.67% 10	6*	2	5	-	-	3
Above 50 yrs.	40	12.50% 5	3*	1	2	-	-	1
Total	310	82	26	12	31	2	24	13

* Indicate the maximum number of infected samples in each age group.

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