Original Research Paper

Zoology

INTESTINAL PROTOZOAN PARASITIC INFECTION IN MALE (DIFFERENT AGE GROUPS) OF URBAN AREAS OF DISTRICT BAREILLY

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ABSTRACT The parasites may be responsible for irritating the intestinal mucosa, causing inflammation and ulceration or may produce toxic substances. In India, intestinal parasitic diseases and other diarrhoeal diseases like gastroenteritis, amoebiasis are the major health problems among children under the age of five years.
Out of 310 samples of male individuals from urban areas of district Bareilly 82 (26.45%) were positive for parasitic ova/cysts. Multiple infection was recorded in 8 samples out of total positive cases. Highest prevalence (34.78%) of intestinal parasite was recorded in 5-15 years age group. The prevalence of *Entamoeba* infection was highest (8.39%) in Urban areas of district Bareilly followed by *Giardia* (3.87%).

KEYWORDS : Intestinal Parasites, Protozoans, Urban areas, Bareilly

Introduction

Parasites of the gastro-intestinal tract are among the most common and widely distributed animal parasites of humans. Most enteric parasites have established a well-balanced host parasite relationship with the human host; the humans in turn tolerate these parasites as well. Light infection is often harmless but an increase in parasitic load, concurrently increases disease. The parasites may be responsible for irritating the intestinal mucosa, causing inflammation and ulceration or may produce toxic substances. In India, intestinal parasitic diseases and other diarrhoeal diseases like gastroenteritis, amoebiasis are the major health problems among children under the age of five years. During 2005, about 1.07 million cases of acute diarrhoea with 2040 deaths were reported by the Govt. of India (2006), the actual incidence might have been manifolds.

Amoebiasis is a major health problem. Globally, it has been estimated that 45 million people carry *E. histolytica* in their intestinal tract and approximately one tenth of infected people suffer from invasive amoebiasis which accounts for about 70,000 deaths in the world. There may be even more cases in the areas devoid of sanitation (WHO, 1998).

The important protozoan pathogens are *Entamoeba histolytica, Giardia lamblia* and certain newer pathogens like *Cryptosporidium, Cyclospora* and *Isospora*. The infection due to *Giardia* is called Giardiasis (lambliasis). *G. lamblia* is a flagellated protozoan that inhabits the small intestine of its host, which may penetrate down into the secretary lobules of the mucosa and then to the biliary passage.

District Bareilly is centrally located in Rohilkhand Division of Uttar Pradesh and its maximum length North South is 75.0 kms. and breadth West-East is 60.0 kms. The district is slightly undulated having a total geographic area of 4125 kms. The population of this district is over 40 lakhs, but unfortunately, no reliable reports are available on the prevalence of parasitic infections from this area. The population of this area was categorized into urban – rural; male – female and divided into various age groups to observe the incidence of protozoan (*Entamoeba histolytica* and *Giardia lamblia*) Parasites.

The present work was conducted with an objective to record parasitic infection of Gastro-intestinal (GI) tract in urban populations of Bareilly district. For this purpose, the following methodology was adopted. Stool samples were collected from urban population with the assistance of primary and junior High Schools of rural centres.

Material and methods
Macroscopic Examination:

The samples were examined with naked eye For the semisolid and watery samples, a saline suspension was mixed and kept at 37°C for further examination. The samples were examined by simple floatation method. The identification of cysts of trophozoites, eggs, larvae and oocysts of the parasites was done on the basis of their basic morphology.

Result and Discussion

The intestinal parasitic infection in urban areas of Bareilly district was worked out with respect to different age groups and in different sexes.

The protozoan parasites viz. *Entamoeba histolytica* and *Giardia lamblia* were observed in this study.

Amongst age group of 0-5 years (40), 5-15 years (115); 15-30 years (55); 30-50 years (60) and above 50 years (40) totalling 310 samples 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) infection was detected only in samples from age group of 0-5 years, 5-15 years and 15-30 years in 5, 18 and 1 sample respectively.

Out of 310 samples of male individuals from urban areas of district Bareilly 82 (26.45%) were positive for parasitic ova/cysts. Multiple infection was recorded in 8 samples out of total positive cases. Highest prevalence (34.78%) of intestinal parasite was recorded in 5-15 years age group.

The prevalence of *Entamoeba* infection was highest (8.39%) in Urban areas of district Bareilly followed by *Giardia* (3.87%).

TABLE – 1 INTESTINAL PARASITIC INFECTION IN MALE OF URBAN AREAS OF DISTRICT BAREILLY IN DIFFERENT AGE GROUPS

Age Group (in years)	No. of Samples	No. of infected samples (%)	Urban Area	
			Protozoan Parasites	
			Entamoeba histolytica	Giardia lamblia
0-5 yrs.	40	35.00% 14	4	3
5-15 yrs.	115	34.78% 40	10	5
15-30 yrs.	55	23.64% 13	3	1
30-50 yrs.	60	16.67% 10	6*	2
Above 50 yrs.	40	12.50% 5	3*	1
Total	310	82	26	12

Infectious disease patterns in human populations are influenced by changes in human behaviour, socioeconomic conditions and environmental factors. Technologic advances have brought about global changes in climate and disease patterns often with adverse effects. Altered ecological conditions have directly resulted in a marked increase in infection rates and associated diseases for many infectious organisms including parasites.

Shifts in land and water use as a consequence of economic development or environmental degradation may increase contact between disease agents; pathogens and human populations. (Patz et al.,1996).

During the present study, the stool samples in age group of 0-5, and 5-15 had maximum frequency of protozoan parasites. Incidence of amoebiasis was more common as compared to giardiasis infection. (Tables 1).Similarly, other studies (Norhayati et al.,2007) have focused on estimating the number of intestinal parasitic (prevalence) infections in man in Malaysia and have reported that intestinal protozoans were Entamoeba histolytica and Giardia duenalis.

Similar studies on intestinal protozoan parasites was carried out where the maximum prevalence of infection was recorded for urban areas (44.1%) of Nigeria. Thus, an insignificant change (P>0.05) was statistically recorded (Ikeh et al.,2006).

Epidemiological studies have shown that protozoan diarrhoea is common among infants and young children of developing countries. The children of almost all age groups are infected. (Wolf 1978; Zaki et al.,1986).

It is envisaged that the studies conducted herein will attract the attention of health authorities in order to improve the health status of the growing population of the area.

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