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GASTRO-INTESTINAL PARASITIC INFECTION IN FEMALE OF URBAN AREAS OF DISTRICT BAREILLY IN DIFFERENT AGE GROUPS

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ABSTRACT

Most of the reports on intestinal parasites have examined either specific group of people or data based on hospital cases. This piece of work is the first epidemiological study on intestinal parasitic infection in different age groups, including infants and school going children of Rohilkhand area.A total of 219 samples belonging to the age groups of I, II, III, IV and V, 28 : (10.71%) infection was found in 61 (27.85%) persons.

INTRODUCTION

Gastro-intestinal pathogenic infection is a common problem affecting more than a quarter of the population throughout the world. These intestinal pathogens include protozoans and helminths, which are most harmful, causing devastating diseases in humans, domestic animals and livestock, more in developing countries than in the developed ones.

In India, the intestinal parasitic diseases and other diarrhoeal diseases : gastroenteritis, amoebiasis and diarrhoea are major health problems. However, no reliable reports are available on the prevalence of parasitic infections from Rohilkhand Division.

Most of the reports on intestinal parasites have examined either specific group of people or data based on hospital cases. This piece of work is the first epidemiological study on intestinal parasitic infection in different age groups, including infants and school going children of Rohilkhand area. The present work is therefore aimed at determining the intestinal parasitic invasion prevailing in this part of the country.

MATERIAL AND METHODS

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.

Macroscopic Examination:

The samples were examined with naked eye for any big worm or the segments of the parasites. For the semisolid and watery samples, a saline suspension was mixed and kept at 37oC 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.
Procedure :

To one ml. of faeces, few drops of salt solution was added in the container, stirring was done continuously to make an even emulsion. The slide (3"x2") was placed carefully at the top of the container so that its centre come in contact with the fluid for 30 minutes, then quickly the slide was lifted. The slide was examined under the microscope. The surface of the film was focussed with 2/3 in objective. Thus the eggs were detected.

RESULT

Parasitic infection in females of urban area:

A total of 219 samples belonging to the age groups of I, II, III, IV and V, 28 : (10.71%) infection was found in 61 (27.85%) persons.

Percentage infectivity in different age groups was recorded as : I-34 : (35.29%); II-79: (39.24%); III-32: (21.62%); IV-41: (17.07%) and V-28: (10.71%). Highest prevalence of infection was found in the following order : Entamoeba (36.07%), Ascaris (31.15%), Pinworm (27.87%), Giardia (16.39%) and hookworm (4.92%). High parasitic infection (39.24%) rate was recorded in the age group 5-15 years and as well as maximum intestinal infection of Pinworm (38.71%), Ascaris (35.48%) and Entamoeba (19.35%) were found in 5-15 years age group. In the age group (above 50) the parasitic infection was significantly lower 10.71% (P<0.05) in comparison to age groups 0-5 and 5-15 years.

Females of urban areas of Bareilly district showed higher rate of Entamoeba parasitic infection among 5-15 and 15-30 years age group.

INTESTINAL PARASITIC INFECTION IN FEMALE 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		Helminth Parasites			Multiple infection
			Entamoeba Histolytica	Giardia lamblia	Ascaris Lumbricoides	Hookworm (Ancylostoma)	Pinwom (Enterobius)	
0-5 yrs.	34	35.29% 12	5*	3	2	1	3	2
5-15 yrs.	79	39.24% 31	6	2	11	2	12*	2
15-30 yrs.	37	21.62% 8	5*	1	3	-	1	2
30-50 yrs.	41	17.07% 7	3*	3	2	-	1	2
Above 50 yrs.	28	10.71% 3	3*	1	1	-	-	2
Total	219	61	22	10	19	3	17	10

DISCUSSION

Rural-urban variations in disease distribution are well known. Chronic bronchitis, lung cancer, cardiovascular diseases, mental illness and drug dependence are usually more frequent in urban than in rural areas. On the other hand, skin and zoonotic diseases and soil-transmitted helminths may be more frequent in rural areas than in urban areas. These variations may be due to differences in population density, social class and deficiencies in medical care.

In urban females group study, highest/maximum rates of parasitic infection were found in the following order Entamoeba (36.07%), Ascaris (31.15%), Pinworm (27.87%), Giardia (16.39%) and Hookworm (4.92%). High intestinal parasitic infection (39.24%) rate was found in the age group 5-15 years and as well as maximum intestinal parasitic infection of Pinworm (38.71%), Ascaris (35.48%) and Entamoeba (19.35%) had been found in

this group (Table-1). In age group (above 50 years) parasitic infection was significantly lower 10.71% (P<0.05) in comparison to age group 1 and 2 (0-5 and 5-15) respectively. This group (Females of urban areas of Bareilly district) had been shown higher rate of Entamoeba intestinal parasitic infection in all females of urban region except 5-15 years age group.

Present study has documented a very high prevalence of gastro-intestinal (GI-) parasites in urban populations in different age groups as shown in Tables 1 (F: 27.85) of three Tehsils of district Bareilly, Rohilkhand Division, Uttar Pradesh.

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. In females out of 219 samples 61 (27.85%) were found to be infected (Tables 1). Highest prevalence (35%) of intestinal parasite was recorded in 0-5 year with a insignificant (P>.005) change 34.78% in 5-15 years of male children was observed in urban areas.

In this study, urban infected females (age group 0-5) were more susceptible (41.67%) for Entamoeba histolytica intestinal parasitic infection.

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% intestinal protozoan parasites, Entamoeba histolytica infection was the highest (15%).The cysts of Entamoeba histolytica are excreted in stool and the ingested cysts release trophozoites which colonize the large intestine (colon) where they multiply and encyst (Sargeaunt,1982).The prevalence rates of amoebiasis vary from 2% to 60% or more in the areas devoid of sanitation (WHO,1980). Similarly, other workers (Rao et al.1971, Stephenson et al.1990) have reported the prevalence of hookworm in the rural population which was 22.1% compared to 11.1% in the urban population (P<0.05).

Amoebic liver abscesses are formed due to the release of toxins released and hepatocyte damage within months after infection (Corry et al.,2004). Ascaris lumbricoides to be the most common parasite (12.8%) whereas the prevalence of Giardia lamblia was 8.0% (Astal,2004).

The studies conducted herein provides a base-line information on the intestinal parasitic invasion studies in rural and urban in various age groups. As the younger population has been found to be more infected with parasites, the condition warrants immediate attention on adopting prophylactic measures to safeguard the future of the area so that healthy adults grow-up to improve the socio-economic status of the area.

REFERENCES

1. Astal Z. (2004). Epidemiological survey of the prevalence of parasites among children in Khan Younis governorate Palestine. Parasitol Res. 94(6) : 449-451.
2. Corry JEB Kucik, USN L.T.M.C., Gary L. Martin LCDR. MC, USN and Sortor B.V. (2004). Common intestinal parasites. J. of Am. Family Physicians 69(5) : 1161-1168.
3. Rao, C.K., Krishnaswamy, A.K. and Biswas H. (1971). Prevalence of intestinal parasites in selected villages of Mahasn District H.P. India. J. Med. Rev. 59 : 1959-1965.
4. Saifi M.A. and Wajihullah (2001). Intestinal parasitic infestation in school children of Ujhani U.P. J. Par. Dis. 25(1) : 26-29.
5. Sargeanut P.G. (1982). Amoebiasis : Pathogenic and Non pathogenic zymodemes. Lancet I : 1386-1388. In : Park's Text Book 17th Edn. (2007). Prevalence and Social Medicine. p.181-182.
6. Stephenson L.S., Latham M.C., Kinoti S.N., Kurz K.M. and Brigham,H. (1990). Improvement in physical fitness of Kenyan School boys infected with hookworm. Trichurus trichiura and Ascaris lumbricoides following a single doze of albendazole. Trans. Roy Soc. Trop. Med. Hyg. 84 : 277-282.
7. WHO (1980). Bull WHO 58 (6) 819-830.