

Prevalence of Intestinal Parasites among School Going Children In Bareilly District

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Abstract : This study was conducted to find out the burden of intestinal parasitic infection among school going children in Bareilly District Uttar Pradesh India. A total of 320 stool samples were collected and screened from 4 schools. The stool sample was examined by direct wet mount examination. The prevalence of intestinal parasite was 22.81%. *Ascaris lumbricoides* (9.68%), *Giardia lamblia* (6.25%), *Entamoeba histolytica* (2.50%) were the commonest parasite isolated. Lack of pure drinking water and lack of proper sanitary disposal, and improper health education is supposed to be the root cause of these parasitic infections. This also advocates the regular and periodic health check up & deworming schedule for the students attending the school.

Key-words: Prevalence, intestine, parasite, children

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INTRODUCTION: Intestinal parasitic infections are among the most common infections worldwide^{1,2}. Intestinal parasitic infection varies considerably from place to place in relation to the disease³. Estimates by W.H.O shows that about 3.5 billion are affected with intestinal parasitic infections, the majority being children⁴, the high prevalence of these infestations is closely correlated to poverty poor environmental hygiene and impoverished health services^{5,6}. Intestinal helminth infestations are the most common infestations among school age children and they tend to occur in high intensity in this age group^{6,7}. Helminthic infestation lead to nutritional deficiency and impaired physical developments which will have negative consequences on cognitive function and learning ability⁸. In India like other developing country intestinal parasitic infection is a major health problem. The prevalence rate of intestinal parasite infection is ranging from 14.6% to a max of 91% in different studies, conducted in various parts of the country. Keeping these aspects in mind the present study was conducted in 4 schools situated in Bareilly district, UP, India. The objective of this study was to estimate the burden of intestinal parasitic infection in school going children in Bareilly district, India.

MATERIAL AND METHODS: The present study was conducted from January to June 2010 with prior

permission from the institutional ethical committee, in 4 schools situated in Bareilly district. The whole study was conducted with the co –ordination of rural health centre Rithora, Bareilly, Bareilly, Rohilkhand Medical College & Hospital, Bareilly, Uttar Pradesh. A total 320 students were screened for the intestinal parasitic infection. 180 male children and 140 female children were included in the study. Oral consent from parents was taken for their children to participate in the study. Plastic containers with identification number were given to the children. Information regarding name, age, sex, school grade and result of stool examination was recorded by personnel from the rural health centre. All the samples collected were transferred to microbiology department, Rohilkhand Medical College, Bareilly. The stool was examined for ova and cyst within 12 hours by direct wet smear examination.

RESULTS: A total of 320 stool samples were examined. The (55.62%) majority of children in this study were in the 6-10 years age group (Table 1, 2). The prevalence of intestinal parasite in the study was 73 (22.81%). Of the positive 73 stool samples the majority 31 (9.68%) of the isolate were the egg of *Ascaris lumbricoides*, followed by cyst of *Giardia lamblia* 20 (6.25%), *Entamoeba histolytica* 8(2.5%), *Hymenolepis nana* 7(2.18%), *Trichuris trichuria* 5 (1.56%), and *Taenia* sp. 2 (0.64%).

Table 1:-distribution of school children on the basis of age and gender

S.no.	Characterstics (Gender)	Age group (years)		11 – 15	≥ 16	Total
		≤ 5	6 – 10			
1	Male	37 (20.55)	98 (54.44)	38 (21.11)	7 (3.88)	180
2	Female	16 (11.42)	80 (57.14)	36 (25.71)	8 (5.71)	140
	Total	53 (16.56)	178 (55.62)	74 (23.12)	15 (4.68)	320

Table 2:-prevalence of intestinal parasite on the basis of age and gender

S. no.	Age group (years)	Number examined	Number positive	Percentage
1	≤ 5	53	11	20.7
2	6 – 10	178	40	22.4
3	11 – 15	74	15	20.27
4	≥ 16	15	07	4.66
	Gender			
1	Male	180	40	28.57
2	Female	140	33	23.57
	Total	320	73	22.81

DISCUSSION: The prevalence of GI parasite infection depends upon various socio – economic factor like, hygiene, availability of clean drinking water poverty⁸ etc. In our study the prevalence of intestinal parasite, came out to be 22.3%.

Bansal etal⁹ and Khurana etal¹⁰ reported a prevalence ranging from 14.6% - 19.3%, Fernandez etal¹¹ reported a maximum of 91% of prevalence of intestinal parasite in school going children in rural setting in and around chennai .Wani etal¹² reported 46.7 % prevalence of intestinal infection among school children in Srinagar city. In another study conducted in rural as well as urban area of Kashmir the prevalence of intestinal parasite was as high as 71.2% Wani etal¹³. Sehgal etal¹⁴ reported a prevalence rate of 42.8% from a low socio – economic area from Chandigarh Studies from other countries namely Philippines, Cambodia and Turkey have reported a higher prevalence of intestinal parasites among school children¹⁵⁻¹⁷. No significant difference in prevalence rate was found on the basis of gender. Although in older age children the prevalence rate of intestinal parasite infections tends to come down.

The most common parasitic infection in this study was *Ascaris lumbricoides* followed by cyst of *Giardia* and *Entamoeba histolytica*. This is in line with other studies conducted by Awasthi etal¹⁸, Fernandez etal¹¹ and Wani etal¹². This is also in line with other studies conducted from other parts of world like Philippines and Combodia which reported a higher prevalence of helminthes^{15,16} Chandrashekhar etal¹⁹, Sehgal etal¹⁴, reported cyst of *Giardia* and cyst of *Entamoeba hystolytica* as the commonest isolate among school children.

CONCLUSION: The result of this study indicates that intestinal parasitic infections among school going children is a common health problem. Helminthic infestation as well as protozoal infestation is commonly found in school going children in India. Poor sanitary condition, lack of clean drinking water supply and education is supposed to play important role in establishing intestinal parasitic infections. This advocates the use of various deworming schedule periodically in school to cure the children and to break the transmission chain of these intestinal parasitic illnesses along with supply of clean drinking water.

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