

Prevalence of intestinal parasitic infections in a tertiary care hospital in rural area

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Abstract

Background: A prevalence study is prerequisite for understanding the spectrum and burden of intestinal parasitic infection in a particular area or community. **Objectives:** The objective of present study is to find out the prevalence of intestinal parasitic infections in all age groups in a tertiary care hospital from rural area. **Materials and Methods:** A total of 304 stool samples were collected by instructing the patient ideally from all age groups. Samples were examined by direct naked eye and microscopically to find out parasitic findings. **Results:** Out of 304, 18 (5.92%) sample were found to show ova/cysts of protozoa or helminthes. Helminthic eggs were found in 14 (77.77%) while protozoal cysts and trophozoites were found in 4 (22.22%) samples. **Conclusion:** A very low prevalence of parasitic infections shows that there is increased awareness of personal hygiene and improved sanitary practices due to health education.

Keywords: Intestinal parasitic infections, low prevalence.

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detrimental effects on physical growth and cognitive performance.⁵⁻⁷ It is necessary to implement measures like improving hygiene, water supply, sanitation level by providing information, health education and communication. This will lead to control and elimination of intestinal parasitic infections. It is now important to know the burden and spectrum of intestinal parasitic infections of a community. Hence, this study is undertaken to find out the prevalence of intestinal parasitic infections in rural hospital.

INTRODUCTION

Intestinal parasitic infections are seen to be a major health problem globally. The prevalence of intestinal parasitic infection is higher in tropics and subtropics than temperate climate.¹⁻³ Over one quarter of world's population is suffering from intestinal parasitic infections.⁴ Developing countries like India show higher rate of prevalence of intestinal parasitic infections. There is scarcity of information of intestinal parasitic infections which is to be noted. Different authors have reported different rates of intestinal parasitic infections due to difference in time, place and methods used. According to age and sex of population, the frequency of intestinal parasitic infection varies. It is a major cause of morbidity which affects nutrition of infected person resulting in increased risk of

MATERIALS AND METHODS

The study was undertaken in Department of Microbiology, MIMSR Medical College, and Yashwantrao Chavan Rural hospital, Latur District, Maharashtra, India. A total of 304 samples of stool were collected from all age groups by giving instructions to ideally collect the sample in wide mouth, clean containers without preservatives. Samples were transported to microbiology laboratory within one hour of collection. Firstly naked eye examination was done to find out presence of blood, mucus, pus and segments or whole of parasites. Two preparations i.e. saline and 1% Lugol's Iodine (procured from Hi-Media Laboratories Pvt. Ltd, Mumbai Maharashtra, India) were prepared on two corners of same slide. Both preparations were systematically examined first under low power (10X), then

switched over to high power (40X) objectives and the findings were recorded.

RESULTS

Out of 304 samples, 18 (5.92%) were positive for either protozoal or helminthic parasitic infection. The highest prevalence was found in age group 11-20 (17.74%) and lowest in age group 51-60 (0%) (Table 1). Helminthic eggs

were found in 14 (77.77%) while protozoal cysts and trophozoites were found in 4 (22.22%) of positive samples. *Ascaris lumbricoides* infection was the most common parasite seen in stool samples of 6 cases (33.33%) followed by *Hymenolepis nana* 5 (27.77%) and *Ancylostoma duodenale* 3 (16.66%). *Entamoeba histolytica* was commonest protozoal parasite found accounting for 3 (16.66%) followed by *Giardia lamblia* 1 (5.55%) (Table 2 and chart 1).

Table 1: Age wise distribution of intestinal parasitic infections

Age groups (Yrs)	Positive	Negative	Total	Positive (%)
1-10	2	24	26	7.69
11-20	11	51	62	17.74
21-30	3	95	98	3.06
31-40	2	32	34	5.88
41-50	2	29	31	6.45
51-60	0	30	30	0
>60	1	22	23	4.34

Table 2: Percentage of parasites found in stool

Parasite	No. of Positive cases	Percentage (%)
<i>Ascaris lumbricoides</i>	6	33.33%
<i>Hymenolepis nana</i>	5	27.77%
<i>Ancylostoma duodenale</i>	3	16.66%
<i>Entamoeba histolytica</i>	3	16.66%
<i>Giardia lamblia</i>	1	5.55%

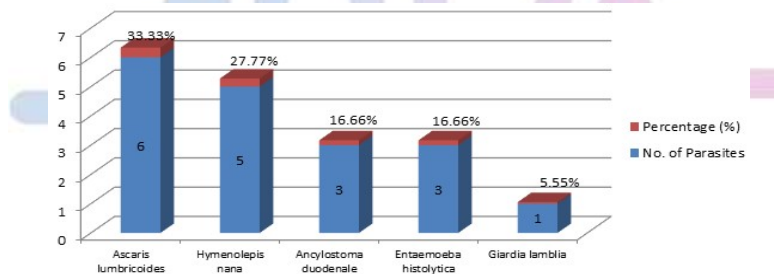


Chart 1: showing number of parasites and their percentage

DISCUSSION

The prevalence of parasitic infections varies from place to place, even in developing countries like India the rate of parasitic infections is different at different places. A very low prevalence rate i.e. below 15% has been reported in most of the earlier studies from of India.⁸⁻¹⁴ However, in many other studies from India, a significantly higher rates of prevalence of intestinal parasitic infections have been reported.¹⁵⁻²¹ Our results of very low prevalence (5.92%) of intestinal parasitic infections fairly correlate with Patel *et al.*⁸, Bhosale *et al.*⁹, Kotian *et al.*¹⁰, Singh *et al.*¹¹, Kavathiya *et al.*¹² Kitvatanachai and Rhongbustri,¹³ and Ismail¹⁴ and are not in agreement with Sitotaw *et al.*¹⁵ Ashok *et al.*¹⁶ Lalbang *et al.*¹⁷, Chandi *et al.*¹⁸, Sitotaw and Shiferaw¹⁹, Dhanabal *et al.*²⁰ and Mareeswaran *et al.*²¹ who reported higher prevalence of intestinal parasitic

infection in their studies. In most of the earlier studies protozoan parasites and among them *Entamoeba histolytica* has been reported to be the most common parasite.^{8,9,12,16,17} Our results showing more prevalence of helminthic infections and *Ascaris lumbricoides* as the most common parasites is not in concurrence with these earlier studies indicating that pattern of infection is different at different places based on geographical and environmental conditions. This study further reveals that there is a significant decrease in the prevalence of parasitic infections. This low prevalence of intestinal parasitic infections may be due to increased awareness, improvement in sanitary practices, personal hygiene, safe drinking water supply, health education, early treatment taking behavior, urbanization and easy access to health services.

CONCLUSION

The results of present study indicate there is significant decrease in the prevalence of parasitic infections. More prevalence of helminthic infections in the present study indicates that pattern of infection changes from place to place even in same country based on various environmental factors.

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