

A Prevalence Study of Intestinal Parasitic Infections in a Tertiary Care Hospital in Rajkot City of Gujarat (India): A Hospital based study.

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Abstract:

Introduction: Intestinal parasitic infections are highly prevalent among the general population in developing country and represents a major cause of morbidity and mortality in children and among high risk groups. This study was undertaken to assess the prevalence of intestinal parasitic infections.

Material and Method: Patients taking treatment in P.D.U. Hospital, Rajkot- a tertiary care hospital in Gujarat, India, were included in study. Naked eye physical and microscopic examination was carried out in the total 578 stool samples received during year 2013.

Result: 48 (8.30%) stool samples showed presence of ova/cyst of protozoa or helminthes. Protozoal cyst or trophozoites were found in 40 (83.3%) while helminthic eggs were found in 8 (16.7%) of positive samples.

Conclusion: Protozoa are more common than helminthes. It is an important public health problem. It is necessary to develop effective prevention and control strategies including health education and environmental hygiene.

Keywords: Intestinal parasitic infection

I. Introduction

Intestinal parasitic infections are one of the major health problems in several developing countries, including India [1]. These infections are distributed throughout the world with high prevalence in low socio-economic communities in tropics and subtropics. Amoebiasis, Ascariasis, Trichuriasis and Hookworm infections are the most common infections all over the world [2]. Intestinal protozoan and helminthes are widely prevalent and causing considerable medical and public health problems in developing countries [3]. Poor sanitation, scarcity of potable drinking water and low standard of personal hygiene contribute to rapid spread of these infections [4]. The frequency of parasitic infections varies with age and sex of general population. Intestinal parasitic infections are more common in children and leads to nutritional deficiency, anemia, growth retardation and impaired learning ability [1,5]. The purpose of this study was undertaken to know the prevalence of intestinal parasitic infections at our place.

II. Material And Method

The study was undertaken in Department of Microbiology, P.D.U. Govt. medical college, Rajkot (Gujarat, India), from period January 2013 to December 2013. Total 578 stool samples received in our laboratory from patients treated at P.D.U. Hospital, both outdoor as well as indoor patients of all age group and both sexes, were included in this study. The stool samples were examined within 1-2 hours of collection. Naked eye physical and Microscopic examination of normal saline as well as iodine preparation, was carried out in each stool sample. Parasites were identified under low and high power of microscope [6,7]. The percentage of the parasites were calculated to find out prevalence of parasitic infections and data were analyzed for interpretation.

III. Result

Total 578 stool samples were included in present study, out of which 48 (8.30%) were positive either for Protozoal or Helminthic infections. Protozoan infection was found in 40 (83.3%) cases, while Helminthic infection in 8 (16.7%) cases.

Entamoeba histolytica infection was commonest in protozoal infection constituting 31 (64.58%), followed by Giardia lamblia 8 (16.67%). Ascaris lumbricoides and Ancylostoma duodenale infection was commonest in helminthic infection accounting for 3 (6.25%) each followed by Hymenolepis nana and Trichuris trichura 1 (2.08%) each (Table 1).

Table 1: Prevalence of various parasites in positive cases

Parasites	Cases (n=48)
Entamoeba histolytica	31 (64.58%)
Giardia lamblia	08 (16.67%)
Ascaris lumbricoides	03 (06.25%)
Ancylostoma duodenale	03 (06.25%)
Isospora belli	01 (02.08%)
Hymenolepis nana	01 (02.08%)
Trichuris trichura	01 (02.08%)

The highest prevalence was found in age group 11 to 20 Years (12.9%) and lowest in age group 31 to 40 Years (4.85%)(Table 2).

Table 2: Total positive cases in various age groups

Age group (Years)	Number of Samples	Positive Samples
<10	97	9 (09.27%)
11-20	62	8 (12.90%)
21-30	108	9 (08.30%)
31-40	103	5 (04.85%)
41-50	63	5 (07.93%)
51-60	85	7 (08.23%)
>60	60	5 (08.33%)

Total 297 males and 281 female were included in study showed the prevalence of parasitic infection nearly equal in male 25(8.42%) and in female 23(8.18%).

IV. Discussion

In the present study parasitic infection was seen in 48 (8.30%) patients out of the total 578 cases. Studies from different part of India have shown different prevalence rates ranging from 6.63% to 46.7% [8,9]. Prevalence rate in our study was low and is suggestive of better awareness of personal hygiene and environmental sanitation in the study population. Many studies have reported significant difference in infection rates between both sexes with male being more infected than females, but no statistically significant difference is found in our study [9,10,11].

The most common parasite encountered in present study was *Entamoeba histolytica* 31 (64.58%), followed by *Giardia lamblia* 8(16.67%). In various studies of India, Rayan showed higher prevalence of *Entamoeba histolytica* (25.3%) followed by *Giardia lamblia* (17.9%) [12], Rameshwarappa KD showed higher prevalence of *Entamoeba histolytica* (65.57%) followed by *Ascaris lumbricoides* (12.68%) [13].

Many studies have shown *Ascaris lumbricoides* as predominant parasite infecting human [14,15], but in our study it was 6.25% only. The difference in prevalence rate of individual parasites may be due to variation between geographic regions, communities, ethnic groups and seasonal variation [16].

Most common affected age group was 11-20 years with 12.9% of cases. So prevalence of intestinal parasitic infection is higher in children. Various studies in India showed higher prevalence rate among children ranging from 6.23% to 42.41% [8,16,17,18].

V. Conclusion

The present study showed low prevalence of intestinal parasites and is suggestive of better awareness of personal hygiene and environment sanitation. But integrated drug treatment and hygiene education is required in children and their parents as children showed higher prevalence for intestinal parasites in comparison to adults.

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