IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 5 Ver. V (May. 2016), PP 13-15
www.iosrjournals.org

A Prevalence Study of Intestinal Parasitic Infections in symptomatic children at Tertiary Care Hospital in Rajkot City of Gujarat (India).

Ghanshyam Kavathia [1], Manish Pattani [2], Anil Chaudhary [3], Tejal Joshi [4], Krunal Mehta[5]

[1,2,]*Associate Professor, Department of Microbiology, P.D.U. Medical College, Rajkot, Gujarat, India.*
[3,]*Tutor, Department of Microbiology, P.D.U. Medical College, Rajkot, Gujarat, India.*
[4,]*Assistant Professor, Department of Microbiology, P.D.U. Medical College, Rajkot, Gujarat, India.*
[5,]*Assistant Professor, Department of Microbiology, M.P. Shah. Medical College, Jamnagar, Gujarat, India.*

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 in children.*
Material and Method: *Pediatric Patients taking treatment in P.D.U. Hospital and Medical College, Rajkot- a tertiary care hospital in Gujarat, India, were included in study. Naked eye physical and microscopic examination was carried out in the total 171 stool samples received during year 2011 & 2012.*
Result: *21 (12.28%) stool samples showed presence of ova/cyst of protozoa or helminthes. Protozoal cyst or trophozoites were found in 17 (9.94%) while helminthic eggs were found in 4 (2.34%) 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 periodic deworming, health education and environmental hygiene.*
Keywords: *Intestinal parasitic infection in children.*

I. Introduction

Intestinal parasitic infections are one of the major health problems in several developing countries, including India [1]. It is estimated that some 3.5 billion people around the world are affected as a result of these infections, the majority being children [2]. 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 [3]. Intestinal protozoan and helminthes are wildly prevalent and causing considerable medical and public health problems in developing countries [4]. Poor sanitation, scarcity of potable drinking water and low standard of personal hygiene contribute to rapid spread of these infections [5]. 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 [1,6]. The purpose of this study was undertaken to know the prevalence of intestinal parasitic infections in children at our place.

II. Material And Method

The study was undertaken in Department of Microbiology, P.D.U. Medical College, Rajkot (Gujarat, India), from period January 2011 to December 2012. Total 171 stool samples received in our laboratory from children treated at P.D.U. Hospital and Medical College, Rajkot, both outdoor as well as indoor patients, 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 [7,8]. The percentage of the parasites were calculated to find out prevalence of parasitic infections and data were analyzed for interpretation.

III. Result

Table 1: Age and sex distribution of the cases

Age group (Years)	Number of Samples		
	Male	Female	Total
1-5	56	47	103
6-10	22	16	38
11-15	18	12	30
Total	96	75	171

Out of 171 total patient, most of the sample were received in the age group of 1-5 years, followed by 6-10 and 11-15 Years of age groups.

Table 2: Age and sex distribution of the positive cases

Age group (Years)	Number of positive cases (n=21)		
	Male	Female	Total
1-5	03	02	05 (23.8%)
6-10	05	04	09 (42.85%)
11-15	03	04	07 (33.3%)
Total	11	10	21

Out of total 21 positive patient, most of the cases were observed in the age group of 6-10 years, followed by 11-15 years in both sexes. Male and female cases were nearly equal.

Table 3: Prevalence of various parasites in positive cases

Parasites	Cases (n=21)
Entamoeba histolytica	12 (57.14%)
Giardia lamblia	05 (23.81%)
Ascaris lumbricoides	02 (09.52%)
Ancylostoma duodenale	01 (04.76%)
Hymenolepis nana	01 (04.76%)

Total 171 stool samples were included in present study, out of which 21 (12.28%) were positive either for Protozoal or Helminthic infections. Protozoan infection was found in 17 (9.94%) cases, while Helminthic infection in 4 (2.34%) cases.

Entamoeba histolytica infection was commonest in protozoal infection constituting 12 (57.14%), followed by Giardia lamblia 5 (23.81%), Ascaris lumbricoides 2 (9.52%), Ancylostoma duodenale 1 (4.76%) and H.nana 1 (4.76%).

IV. Discussion

In the present study parasitic infection was seen in 21(12.28%) patients out of the total 171 cases. Studies from different part of India have shown different prevalence rates ranging from 6.63% to 46.7% [9,10]. 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 and study performed by Adamu et al[2,10,11,12].

The most common parasite encountered in present study was Entamoeba histolytica 12(57.14%), followed by Giardia lamblia 5(23.81%). In various studies of India, Rayan et al showed higher prevalence of Entamoeba histolytica (25.3%) followed by Giardia lamblia (17.9%) [13], Dakshina B. et al showed higher prevalence of Entamoeba histolytica (55.3%) followed by Giardia lamblia (40.4%) [14].

Many studies have shown Ascaris lumbricoides as predominant parasite infecting human [15,16], but in our study it was 9.52% only. The difference in prevalence rate of individual parasites may be due to variation between geographic regions, communities, ethnic groups and seasonal variation [17].

In present study most commonly affected age group is 6-10 Years(42.85%). Suwarna Pawar et al observed similar finding in their study with 60.9% of cases in 6-10 years of age group[18].

V. Conclusion

The present study shows that, intestinal parasitic infection is a major public health problem in children. Interventions including health education and personal hygiene to children and their parents are required. There is need to promote mass scale deworming and health promotion campaigns to create awareness about health and hygiene.

References

[1] Baragundi MC, Sonth SB, Solabannwar S, Patil CS. The prevalence of parasitic infections attending tertiary care Hospital, National
[2] Journal of Basic Medical Science, 2011;2(1):31-34.
[3] H. Adamu, T.Endeshaw, T.Teka, A.Kife, B.Petros. The prevalence of intestinal parasites in paediatric diarrhoeal and non diarrhoeal patients in Addis Ababa hospitals, with special emphasis on opportunistic parasitic infections and with insight into the demographic and socio- economic factors: Ethiop. J. Health Dev. 2006; 20(1); 39-46.
[4] Norhayati M, Fatmah MS, Yusof S, Edariah AB. Intestinal parasitic infections in Man: A review, Med J Malaysia, 2003;58(2):296-305.
[5] Bdir S, Adwan G, Prevalence of intestinal parasitic infections in Jenin Governorate, Palestine: a 10 years retrospective study, Asian
[6] Pacific Journal of Tropical Medicine, 2010;3(9):745-47.
[7] Celikoz A, Guler N, Guler G, Oztop AY, Degeril S. Prevalence of intestinal parasites in three socioeconomically different regions of Sivas, Trkey. J Health Popul Nutr, 2005;23:184-91.
[8] Eatson A. Intestinal worm impair child health in the Philippines. BMJ 1999;318:214
[9] Proctor EM. Laboratory diagnosis of amoeboasis. Clin Lab Med, 1991;11(4):829-59.
[10] Petri WA Jr, Singh U. Diagnosis and Management of amoeboasis. Clin Infect Dis. 1999;29(5):1117-5
[11] Davane MS, Suryawanshi NM, Deshpande KD. A Prevalence Study of Intestinal Parasitic Infections in a Rural Hospital. International Journal of Recent Trends in Science And Technology, 2012;2(1):1-3.
[12] Wani SA, Ahmed F, Zargar S.A, Ahmad Z, Ahmad P, Tak H. Prevalence of intestinal parasites and associated risk factors among school children. In Srinagar city, Kashmir, Journal of Parasitology, 2007;93(6):1541-43.
[13] Singh DS, Chandani RR, Kumar S, See Catt JS, Srivastava PK, Udupa KN, Prevalence and pattern of intestinalparasitism: A rural community of Varanasi. Indian J Pre Soc Med, 1984;15:1-8.
[14] Ibrahim AH. Prevalence of intestinal parasites among School Children in Dier-EL-Balah town in Gaza strip, Palestine, Ann Saudi Med, 2002;22(3-4):273-75.
[15] Rayan P, Verghese S, Mcdonnell PA. Geographical location and age affects the incidence of parasitic infestations inschool children. Indian Journal of Pathology and Microbiology, 2010;53(3):498-502.
[16] Dakshina B, Verma AK, Bhardwaj HHD. Intestinal parasitic infestation among children in a semi urban Indian population. Tropical Parasitology 2011;1(2):104-107.
[17] Choubisa SL, Choubisa L, Intestinal helminthic infections in tribal population of Southern, Rajasthan, India Journal of parasitic disease, 2006;30(2):163-167.
[18] D Silva NR, Jayapani VP, De Silva HJ. Socioeconomic and behavioral factors affecting the prevalence of geohelminths in preschool Children, South East Asian Journal of tropical medicine and public health, 1996;27(1):36-42.
[19] Singh C, Zargar SA, Masoodi I, Shoukat A, Ahmad B. Predictors of intestinal parasitosis in school children of Kashmir : A prospective study. Tropical Gastroenterology 2010;31(2):105-107.
[20] Suwarna Pawar, Kishore Ingole, Mayuri Bhise. Study of prevalence of intestinal parasitic infections in symptomatic children at tertiary care hospital. International Journal of applied Research 2016;2(4):243-248.