

Prevalence of Protozoal Intestinal Parasite among Children in Babylon Province. Iraq

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Abstract

A total of hundred and thirty-eight child were examined , during period from October 2021 - May 2022 to detect prevalence of protozoal intestinal parasite . Out of 138 child examined , fifty-one child were infected with different protozoal intestinal parasites (37%) . The study exhibited that 27 child were infected with *Entamoebahistolytica*(19.6%) while 17 child found infected with *Giardia lamblia*(12.3%) .Two only found infected with *Cryptosporidium parvum*(1.4%) . Five patients show mixed infection with *E.histolytica* and *C.parvum*(3.6%) . According to seasons of the year, Spring show high infection during April and May (52.9% and 60% respectively) . In concern to gender , males found more infected than females but without significant differences (40.7% and 29.8% respectively) . Rural patients show infection more than those from urban residences on level $P>0.05$ (45.9% and 26.6% respectively). The age category more than 12 years old show so high rate of infection on level of $P>0.01$ than those less than 5 years old .(80% and 25.8% respectively) .Consistency of stool and severity of infection with parasite also studied .

Key words : prevalence . intestinal . parasites. children

Introduction

Parasitic infections , caused by protozoal parasite , are among the most prevalent infections in human in developing countries that cause a significant morbidity and mortality in endemic countries .[1] . parasitic infections are a major health problem , particularly intestinal parasites which are most common and withhigh prevalence in Iraq [2,3,4,5,6] . Intestinal amoebiasis caused by *Enatmoebahistolytica* consider third greated parasitic disease responsible for death in the world after Malaria and Schistosomiasis[7] . previous studies in Iraq had been show high prevalence of amoebiasis ranged between 14-40% , especially in rural areas [4,5,6] . Giardiasis caused by *Giardia lamblia* is frequent cause of diarrhea that have negative impact in growth and development of children [8] . In Iraq , especially in Babylon , no much update epidemiological studies has been done , so our present study aimed to throw light on epidemiological map of protozoal intestinal parasites In Babylon.

Material and Methods

A total of 138 patients of both sexes , were examined from October /2021-May/2022 . Stool sample were collected in clean fit cover containers and transported to laboratory of Al-Musaib Technical Institute under cooling . All samples are examined Macroscopically by naked eye to investigate consistency , color , blood and mucus [9] , then examined Microscopically by direct method using normal saline and lugholes iodine to detect trophozoites and cysts of protozoal intestinal parasites [10] .

Statistical analysis

Statistical examination for data were done by using Chi-square (χ^2) .[11]

Results and discussion

Our results showed that prevalence of amoebiasis (19.6%) was higher than giardiasis (12.3%) , while cryptosporidiosis was found in two patients only (1.4%) (Table1), These results found identical with previous studies in Iraq [2,3,12,13] , and this may be attributed to greater longevity of *E.histolytica* in environmental conditions according to seasons of the year. Spring was exhibited high infection especially in April and May (52.9 % and 60%respectively) , this epidemiological results were found in agreement with [4,5,12,13] , whom reported that prevalence of amoebiasis and giardiasis increase in the period from May to September , and the increase of infection may be due to increase prevalence and reproduction of many insects that play a role in transmission of these parasites during hot period of the year . [14] , or increase growth and reproduction of these parasites with increase response of human body to these intestinal organisms during the period above [15]. No significant differences was found between males (40.7%) and females (29.8%) in the total rate of infection with protozoal intestinal parasites (Table2) . Our results found identical with [6] who reported that no significant differences in rate of infection between males and females patients . Its suggested that the two gender were equally involved in out and indoor activities that lead to parasite transmission in both sexes . Regarding to residence , the infection with amoebiasis , giardiasis and cryptosporidiosis in rural areas (45.9%) was more than urban (26.6%) (Table 3) . The previous studies [2,16,17] come in agreement with results of our study , this may be related to environment of rural patients where food and drinkable water was contaminated with feces of rodents , dogs, cats and sheep that play a role as reservoirs for these parasites .Children up to 12 years old were more infected (80%) than the lower ages (Table 4). In Basrah[2] reported the same results , which may be due to deterioration the standard of people hygiene and sanitary condition in these ages , or because of using human feces as soil fertilizers which increase chance of infection spreading among horticulture , whom most of them up to 12 years old , especially in rural areas . Most of the infected samples characterize with diarrhea , blood and mucus , while severity of infection ranged between sever to moderate.

Table 1 : prevalence of protozoal intestinal parasites among patients through months of the study

Months	No. examined	No.infected								Total %)(
		G. lamblia	%	E. histolytica	%	C. parvum	%	C. Parvum E. histolytica	%	
Oct. 2021	19	3	15.8	2	10.5	0	0	1	5.2	6(31.6)
Nov.	29	2	6.9	0	0	0	0	2	6.9	4(13.8)
Dec.	7	1	14.3	0	0	1	14.3	1	14.3	3(42.9)
Jan.	8	2	25	0	0	0	0	1	12.5	3(37.5)
Feb.	13	4	30.8	1	7.7	0	0	0	0	5(38.5)
March	20	3	15	2	10	1	5	0	0	6(30)
April	17	0	0	9	52.9	0	0	0	0	9(52.9)*
May	25	2	8	13	52	0	0	0	0	15(60)*
Total	138	17	12.3	27	19.6	2	1.4	5	3.6	51(37)

*P>0.05

Table 2 : prevalence of protozoal intestinal parasites among patients according to gender

Sex	No.examined	No.infected	%
Males	91	37	40.7
Females	47	14	NS29.8
total	138	51	37

NS : non-significant

Table 3 : prevalence of protozoal intestinal parasites among patients according to residence

Residence	No.examined	No.infected	%
Rural	74	34	* 45.9
urban	64	17	26.6
Total	138	51	37

P>0.05 *

Table 4 : prevalence of protozoal intestinal parasites among patients according to age

Age	No.examined	No.infected	%
1 month -5year	66	17	25.8
6-12 year	67	30	44.8
13-17 year	5	4	**80
Total	138	51	37

** P>0.01

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