

Incidence of Intestinal Parasites Infestation Among primary School Students in AL-Kufa city

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Abstract

This study done for determination of incidence of intestinal parasitic infestation among 100 children patients within the ages of primary school (7– 10 years old), who visited the outpatient clinic in Al–Furat general hospital at Kufa city during the period from February to May 2005 .

General stool examination was done for all stool specimens by different techniques. It revealed a relatively high incidence rate of intestinal parasitic infestation (51%) , which seems to be related to poor personal and community hygiene among those children .

The most common parasite recovered was *Entamoeba histolytica* which represented in about (49%) of cases , followed by *Giardia lamblia* (21.5 %) and *Enterobius vermicularis* (15.6 %) .

History taking from children revealed that the most common symptoms were abdominal pain , discomfort (82%) and oral pruritus (43%) .

Physical examination revealed that (42%) of children were having significant anemia (Hb<10 gm/ dl) .

(10 – 7)

. 2005 –

(%51)

(%49)

(%21.5)

.(% 15.6)

(%82)

(%43)

10)) (%42)

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Introduction

Intestinal parasitic infestation is a worldwide problem .Intestinal nematodes like *Ascaris Lumbricoides* infects more than 1- billion persons (Brook et al. , 1998) , & 2 per 1000 infected children per year (Layne , 2004) . 600 – 800 million have hook worm (*Ancylostoma duodenale* or *Necator americanus*), hundreds of millions are infected with filarial worms and equal numbers have pinworm (*Enterobius vermicularis*). (Brook et al. , 1998)

However , intestinal parasitic infection is considered as one of the most common disease in developing countries, in young children it considers as a serous medical problem (Al– Saadi et al., 1998). the prevalence of infection varies from area to area(Fauci et al. ,1998) .

It is often intensified in tropical and subtropical climate due to contaminated water supply, low standard of hygiene and deposition of human feces indiscriminately or used for fertilizer (Layne , 2004) .

In Iraq the prevalence rate is relatively high in children , and varies from area to another depending on hygiene, sanitation from , and geographical factors (like rivers , lakes) some studies dealing with this subject especially in the north of Iraq like those done by (Al- Saadi *et al.*, 1998) . In Tikrit city, reported that the prevalence was (19.8%) .

In Najaf, the prevalence of infection was (62.8%) by (Al- Nahi *et al.*, 1999), but this study did not reveal in details the distribution according to the parasitic types .

The aim of the Study

1-To find out the incidence rate of intestinal parasitic infestation among the children within the age group (7 – 10) years in Kufa city .

2-To determine presence of relationship between parasitic infection of intestine and relevant abdominal symptoms and signs .

3-Demonstration of presence of mixed parasitic infection .

Materials and Method

A study has done to determine the incidence rate of intestinal parasitic infestation among primary school children (7–10) years old age in Kufa city .

A hundred stool specimens were collected from hundred children patients within the mentioned age group (62 male and 38 female) who visited the outpatient clinic in Al-Furat general hospital at Kufa city during the period from Feb. to May 2005 .

A full history and examination were carried out for these children by the responsible physician pediatrician and about 10 grams of stool specimen was taken from each child and sent to the lab. of the hospital where it was manipulated according to (Inglis ,1997) and examined for presence of intestinal parasites by direct microscopic examination and concentration methods (floatation concentration and sedimentation concentration techniques), (Faust *et al* ,1975), and scotch tape method was used for the detection of Enterobinus .

Results

Among the hundred children patients examined, fifty one of them were infected or harbored some intestinal pathogenic parasite . Only 30 of the (62) male patients, (48.4%) were infected, while (21/38) of female patients (55.2%) were infected (table 1) .

Regarding the clinical presentation of the examined children, abdominal pain or discomfort and anal pruritus were the commonest symptoms (table 2). Eighty two patients (82%) were complaining of abdominal pain discomfort, of whom, 46 (56%) were being infected, while 43 patients (43%) were having anal pruritus of whom ,36 (83.7%) were infected .

Regarding the signs ,(54.7 %) (23/42) of the anemic children patients (Hb< 10 gm/dl) were being infected. where as only 5% of patients (5/100) found to have significant hepatomegally or hepatosplenomegally, of whom, only 3 were being infected (table3) of mixed infection .

At least one intestinal parasite was detected in 51% (51/100) of children , and multiple parasitic infestation was recorded in (14 %) (14/100) .

The most common parasitic infestation was *E. histolytica* 49% (25/51), of which , approximately 72% were in cyst stage. The second common parasite was *G.lamblia* 21.5% (11/51) followed by *E. vermicularis* 15.6% (8/51) . (table 4)

Table (1)
Total number of examined children with number of being infected in relation to sex

Sex	Whole number	Number with positive infection	% of infectivity
Male	62	30	48.4 %
Female	38	21	55.2 %
Total	100	51	103.6 %

Table (2)
Symptoms in relation to lab. results of infected and non infected patients .

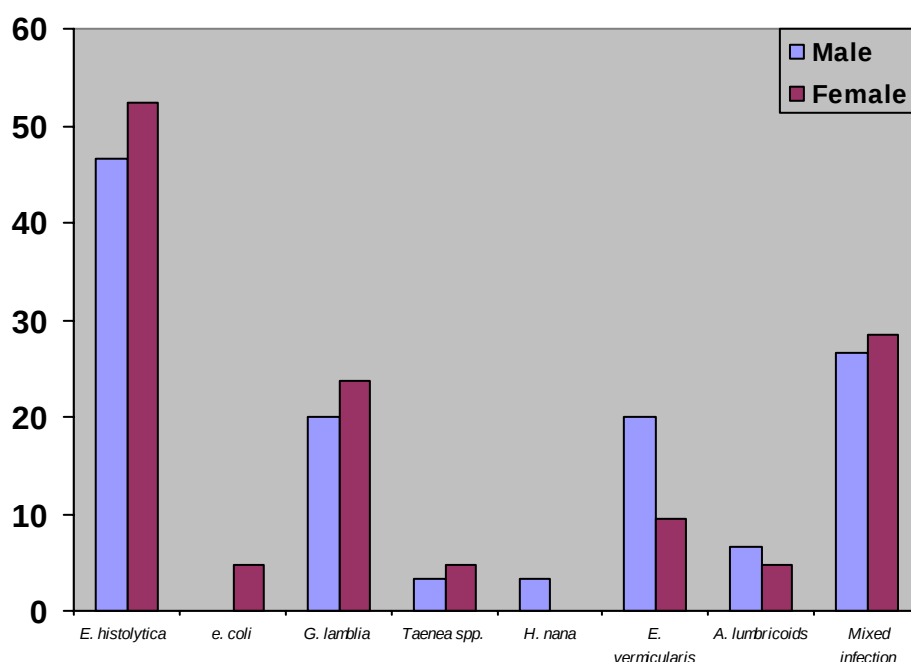
State Of infectivity	Symptoms			
	Abdominal Pain discomfort	Anal pruritus	Diarrhea	Vomiting
Non-Infected	36	7	11	10
infected	46	36	17	13
Total	82	43	28	23

Table (3)
Signs in relation to lab. Result of infected and non infected patients

State Of infectivity	Signs	
	Anemia Hb<10gm%	Hepatamegally Or hepatosplenomegally
Non-Infected	19	2
infected	23	3
Total	42	5

Table (4)
Types of parasites and percentage of infestation recovered from stool specimens of male and female children

Kind	Infected male	percentage	Infected Female	percentage	Total	percentage
<i>E.histolytica</i>	14	46.6%	11	52.3%	25	49%
<i>E. coli</i>	0	--	1	4.7%	1	1.9%
<i>G.lamblia</i>	6	20%	5	23.8%	11	21.5%
<i>Taenea spp.</i>	1	3.3%	1	4.7%	2	3.9%
<i>H. nana</i>	1	3.3%	0	-	1	1.9%
<i>E.vermicularis</i>	6	20%	2	9.5%	8	15.6%
<i>A. lumbricoids</i>	2	6.6%	1	4.7%	3	5.9%
Mixed infection	8	26.6%	6	28.5%	14	27.5%



Fig(1)
A diagram shows the distribution of intestinal parasitic infection in relation to sex

Sex	<i>E. histolytica</i>	<i>E. coli</i>	<i>G.lamblia</i>	<i>Taenea spp.</i>	<i>H. nna</i>	<i>E.vermicularis</i>	<i>A. lumbricoids</i>	Mixed infection
Male	46.6%	--	20%	3.3%	3.3%	20%	6.6%	26.6%
Female	52.3%	4.7%	23.8%	4.7%	--	9.5%	4.7%	28.5%

Discussion

Intestinal parasites remain major causes of morbidity , specially in children in developing countries , and are still diseases of the poor though the diagnosis and treatment for most of them are not difficult .

This study revealed that there is a relatively high incidence rate of parasitic infection (51%) in comparison to other local reports. In Kirkuk city, the incidence was (40.45%) as reported by (Kadir and Saman 1999), and in Tikrity , it was (19.8 %) (Al – Saadi , 1998) .

Although incidence of intestinal parasitic infection differs from region to region depending on many factors, like hygiene, socio- conomic status, and home or school environment. this relatively high incidence rate may be attributed to low socio-economic status of the children's families in of Kufa city and bad personal hygiene in addition to the presence of improper sewage disposal which is characteristic for the center of Kufa city. However, this result is agreed with that reported by (Inglis,1997) .

This study revealed that the most common symptoms in parasitic harboring children was abdominal pain or discomfort and anal pruritus which are the symptoms of most intestinal parasites .

These two complaints have been found to be statistically significant . Of the eighty two patients with abdominal pain , fourty six (56%) were positive for intestinal parasites , while parasites were detected in only five of eighteen patients (27.7%) without abdominal pain . Similarly , thirty six of fourty three patients (83.7 %) with anal purities and fifteen of fifty seven (26.3%) patients without anal pruritus were found to be positive for intestinal parasite.

The relation between intestinal parasite infestation and other symptoms such as diarrhea and vomiting were not significant. Similarly, neither anemia nor hepatosplenomegally were found to be statistically significant .

This study has indicated that *E. histolytica* was the commonest parasite among all children patients followed by *G.lamblia* and *E. vermicularis*. This may be due to the presence of the source of infection in the patients area studied and frequent feco –oral spread of infection among children . in addition , contamination of soil by human feces in combination with a high degree of over crowding and a low socio – economic status increases the susceptibility to parasitic infestation .

However, these results are in agreement with that reported by (Kadir and Saman, 1999) who reported that *E. histolytica* represent (19%) . of total parasitic infection among children patients in Kirkuk city .

The mixed infection was (27.5%) from the total parasitic infection .Also, this rate is higher than that reported by (Al- Saadi, 1998; Kadir and Saman, 1999). This may return to improper feeding programs because most of those children coming from poor families that may interfere with immune status of the child.

There was no significant difference in prevalence of parasites between male and female (table 4 and fig. (1). However, the sex predominant for parasite infection is still not confirmed. some reported higher rate in male , the others reported similar rate in both sexes, the infection may relate to the daily activity of the surveyed subject than sex .

Conclusion

From over all out comes of our study, and regarding to control and prevention of high incidence we conclude that those children in these primary schools need at least annul screening based program for detection of new cases and treatment of all presenting cases, also providing the support for the pupils educational and antinational condition, in addition to new healthy managing of the swage disposal net in the center of Kufa city .

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