Study on the intestinal parasites among pre-school children in Basrah city

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Abstract

A total of seven hundred and fifty of fecal samples were collected and examined for intestinal parasites in Basrah city during the period from July 1998 to June 1999. Six hundred and fifty specimen were collected from children admitted in Basrah Hospital for Birth and Child with or without diarrhea symptomes and one hundred from children outside the hospital.The highest percentage of infection was recorded in March (90%) and the lowest in January (11.7%). It was found that the percentage infection in female was (52.4%) while in male (51.2%), Moreover, the total percentage of infection with protozoa was (42.1%) and of helminths was (7.7%).

Key words: human intestinal parasites, prevalence, protozoa, giardiasis, ameobiasis.

Introduction

Human intestinal parasites are the commonest health problem in many developing countries (1). This problem varied from one area to another depending on personal and community hygiene, sanitation and climatic factors (2).Helminths and Protozoa are among the largest group of parasites that inhabit the human intestine(3).Few studies had been done to determine the prevalence of intestinal parasites in Iraq, Al-Juboori and Shafiq (1976) examined (240) stool specimens from school children in two different areas in Baghdad.The prevalence of infection with intestinal parasites was higher in villages children than those from Mosul city center (5). The school children from marsh land in Basrah showed a higher prevalence infection of intestinal parasite than in dry land (2).The infection with intestinal parasites was related to socioeconomic levels of the population in Basrah (6).The aim of the present study is to monitor the prevalence of infection in pre-school children and to determine the intestinal parasites species.

Materials and Methods

A total of (750) stool samples were collected randomly from Basrah Hospital for Birth and Child, (650in patients and 100out of patients during the period from July 1998 to June 1999.The samples which were collected from children at the morning brought to the laboratory of Veterinary Medicine College, where they examined for parasites by direct method (Logul's ioden diluted solution) and by floatation and sedimentation methods.

Results and Discussion

The relationship between infection, sex and rate of infection with parasites in males and females children (1<2 years, 3-6 years) of different age groups from in and outside of hospital were recorded (table 1).

Table (1): The relations between the number of examined , sex and age of children

during the period from July 1998 to June 1999.

Month	In patients								Out patients			
	1 < 2 years				3-6 years							
	No.Exam.		No.Inf.		No.Exam.		No.Inf.		No.Exam.		No.Inf.	
	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂
July 1998	21	22	9	12	2	5	—	4	5	2	3	1
August	16	15	4	13	13	8	11	2	—	3	—	2
September	12	18	8	12	21	15	12	6	6	5	2	1
October	19	12	5	10	18	12	3	7	3	4	1	3
November	21	20	18	15	12	18	6	8	9	8	5	3
December	18	12	12	10	15	10	13	2	—	6	—	2
January 1999	10	12	6	8	6	11	—	2	12	—	8	—
February	11	15	6	13	5	3	—	1	2	6	—	3
March	15	20	12	8	13	17	12	15	3	2	1	—
April	18	20	6	18	5	9	4	—	5	8	2	4
May	21	29	11	20	7	11	4	3	2	3	—	1
June	19	18	13	12	—	—	—	—	4	2	2	—
Total	201	213	110	151	117	119	65	50	51	49	24	20

The high percentage infection of children less than one year may be attributed to the drinking of contaminated milk or water.The highest percentage of infection was found in March (90%) and the lowest in January (11.7%). Children stool examined outside of the hospital show a highest percentage infection in August (66.6%) and lowest in May (20%) (table 2).

The present study shows a high monthly variation in the percentage infection in relation to age groups of children and in male and female with high percentage infection in Mrach and lower in January. A high percentage infection of *Amoebiasis* and *Giardiasis* was found during Summer months (7).The variation in percentage of infection between male and female in two age groups of children were noticed (table 3).

The percentage of infection in single and double infections in age group (1<2years) and (3-6years) was (45%, 27.9%, 17.8%, 20.3%) respectively, while it was (25%, 19%) in examined children from outside of the hospital(table 4).

The percentage of infection in single and double infections in age group (1<2years) and (3-6years) was (45%, 27.9%, 17.8%, 20.3%) respectively, while it was (25%, 19%) in examined children from outside of the hospital(table 4).

Giardia lambelia and *Entamoeba histolytica* were among common parasitic protozoa in children in many regions of Iraq (2).(9) showed that the percentage infection with *G. lambelia* was 47.02% . (2) mentioned high infection rate of intestinal parasites in male as compared with female.The monthly variation in the percentage of infection in male and female in two age group of children was recorded in (Figure 1).

Table (2): The percentage infection of examined children in and outside of the hospital during the period from July 1998 to June 1999.

Month	In patients		out patients
	1 < 2 years	3-6 years	
	(%)Infection	(%)Infection	(%)Infection
July 1998	48.8	57.1	57.1
August	54.8	61.9	66.6
September	66.6	58.3	27.2
October	48.3	33.3	57.1
November	80.4	46.6	47.0
December	73.3	68.0	33.3
January 1999	54.5	11.7	66.6
February	73.0	12.5	37.5
March	57.1	90.0	20.0
April	63.1	28.5	50.0
May	62.0	38.8	20.0
June	67.5	——	33.3
Total	63.0	48.7	44.0

Table (3): The percentage of infection in male and female in and out patients during the period from July 1998 to June 1999.

Age	Percentage of infection	
	♀	♂
1 < 2 years	54.7	70.8
3-6 years	55.5	42.0
Out of hospital	47.0	40.8
Total	52.4	51.2

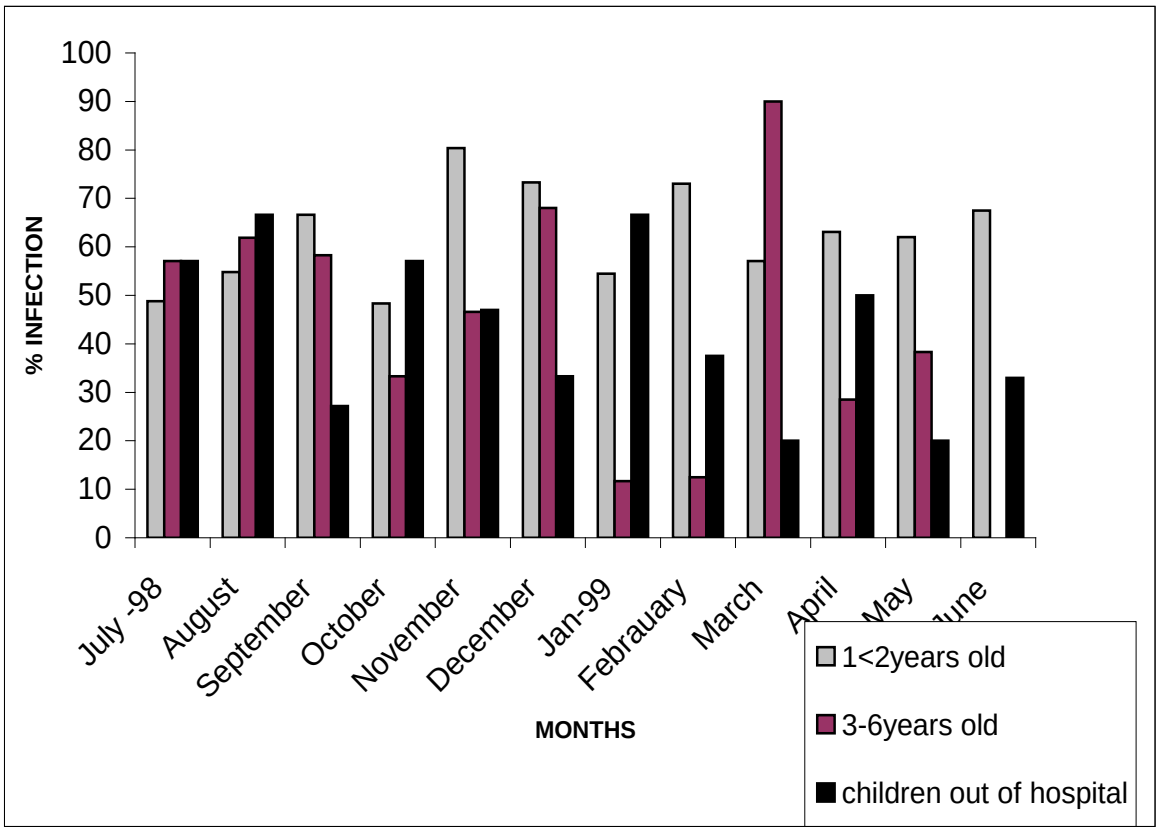
Table (4): The number of examined and infected children (in and out patients) with single and double infections.

Age	Single infection			Double infection		
	No. exam.	No. inf.	(%) Inf.	No. exam.	No. inf.	(%) Inf.
1 < 2 years	414	187	45.1	414	74	17.8
3-6 years	236	66	27.9	236	48	20.3
Out of hospital	100	25	25	100	19	19.0
Total	750	278	37.06	750	141	18.8

Table (5): The type of parasite in examined children (in and out of hospital) during the period from July 1998 to June 1999.

Parasite Species	In patients				Out patients		Total
	1<2 years	% Inf.	3-6 years	% Inf.	No.Inf.	% Inf.	
Entamoiba histolytica	158	60.5	47	41.2	12	27.2	42.9
Giardia lamblia	103	39.4	50	43.8	18	40.9	41.3
Hyminolepis nana	____	_____	6	5.2	8	18.1	11.6
Ascaris lambricoides	____	_____	3	2.6	2	4.5	3.5
Enterobius vermicularis	____	_____	8	7	4	9.0	8
Total	261		114	98.8	44	98.7	99.3

Figure (1): The relationship of parasitic infection in male and female with all age groups of examined children during the period from July 1998 to June 1999.



ANOVA test shows no significant differences between age, sex and rate of infection, while there are high significant differences in probability ($P<0.01$) between parasites, diarrhea and age.High significant differences ($P<0.01$) were found between parasites species of in children under study. Children examined outside the hospital show no significant differences between infection, age and sex.

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دراسة إصابة الأطفال قبل سن المدرسة بالطفيليات المعوية في مدينة البصرة

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الخلاصة

تم فحص ما مجموعة (750) عينة براز للفترة من تموز 1998 إلى حزيران 1999 للكشف عن الطفيليات المعوية. قسمت العينات إلى (650) عينة للأطفال الراقدين في مستشفى البصرة للطفل والولادة و(100) عينة للأطفال من خارج المستشفى.سجلت أعلى نسبة للإصابة في شهر آذار (90 %) وأقل نسبة في كانون الثاني (11.7 %)كانت نسبة الإصابة في الإناث (52.4%)وفي الذكور (51.2%) كما بلغت نسبة الإصابة بالأبتدائيات (42.1%) وبالديدان (7.7%). شكلت إصابة الأطفال بالابتدائيات أعلى نسبة إصابة بين الأطفال الراقدين في المستشفى بينما لوحظ وجود تفاوت في نسب الإصابة بين المفحوصين خارج المستشفى , حيث تراوحت النسب بين 4.5-40.9% في الإصابة بـ *Ascaris lambricoides , Giardia lambelia* .