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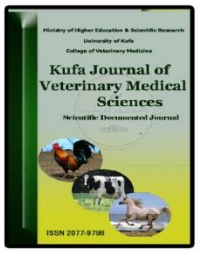

Prevalence of *Entamoeba histolytica* and *Giardia lamblia* parasites among patients attending Al-Emam Ali hospital in Al-Mashrooh provice / Babylon

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Abstract

Out of 492 patients attending Al-Emam Ali hospital, examined during the peroid from beginning of June/2013 to the end of may/2014, 79 (16.05%) were infected with *G. lamblia* and 115 (23.37%) were infected with *E. histolytica.* Highest rate of infection with giardiasis was in July and March (20.93%, 20.51% respectively), while the lower infection was found in December (8.51%). Amoebiasis show high rate of infection in September (41.93%) and low rate of infection in May (14.06%). Prevalence of giardinsis and amoebiasis in rural areas (16.8%, 26.3% respectively) were found higher than urban areas (15.3%, 20.3%), but with out significant differences. Also no significant differences were found between infected males and females patients. The infection of both parasites was found increased with advancing ages of patients. Mixed stages (trophozoites and cysts) was the most apparent in posative cases of amoebiasis, while trophozoites stage was found apparent in posative cases of giardiasis.

مدى انتشار طفيلي الامبيا الحالة للنسيج والجياردیا اللمبلية بين المرضى المراجعين إلى مستشفى الإمام علي في ناحية المشروع/بابل

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الخلاصة:

تم فحص 492 مريضا من المراجعين إلى مستشفى الإمام علي (ع) خلال الفترة من بداية شهر حزيران/2013 لغاية نهاية شهر أيار/2014، ووجد أن 79 (16.5%) منهم كانو مصابين بطفيلي الجياردیا اللمبليه و115 (23.37%) مصابين بطفيلي الامبيا الحالة للنسيج. ان أعلى نسبة إصابة بطفيلي الجياردیا سجلت في شهري تموز وآذار (20.93%، 20.51% على التوالي) بينما كانت اقل نسبة اصابة في شهر كانون الاول (8.51%). طفيلي الامبيا الحالة للنسيج اظهر أعلى نسبة إصابة في شهر أيلول (41.93%) بينما وجدت اقل نسبة إصابة في شهر آيار (14.06%). أن مدى انتشار طفيليات الجياردیا والامبيا في المناطق الريفية (16.8%، 26.3%على التوالي). كانت أعلى مقارنة بأنتشارها في المدينة (15.3%، 20.30% على التوالي) لكن بدون وجود فروقات مهمة احصائيا. أيضا لم تسجل فروقات مهمة احصائياً بين الذكور والإناث المصابين بطفيلي الجياردیا والامبيا. ان الإصابة بين المرضى بكلا الطفيليين ازدادت مع تقدم العمر. وكان الطور المختلط (الناشطات والاكياس) هو الطور الأكثر تكرارا في العينات الموجبة بطفيلي الامبيا، بينما كان طور الناشطات هو الطور السائد في العينات الموجبة لطفيلي الجياردیا اللمبلية.

Introduction:

Intestinal protozoa infections are common in all countries of the world, and their prevalence are varied from one province to anthor according to degree of personal and community hygiene, sanitation and climate factors [1]. Parasitic infections are amajor health problem, particulary intestinal parasites which are most common and with high prevalence in Iraq [2, 3, 4, 5, 6]. Intestinal amoebiasis caused by protozoan *Entamoeba histolytic* in the third greated parasitic disease responsible for death in the world, after malaria and schistosomiasis [7]. Previous studies in Iraq had beeu shown high prevalence of amoebiasis ranged between 14-40%, especially in rural areas [4. 5. 6]. Giardiasis caused by *G. lambila* is frequent cause of diarrhoea that can have negative impact in growth and development of children [8].

In Iraq, especially in Babylon, no much epidemiological studies had been done, So the aim of this study is to throw light on epidemidogy of amoebiasis and giardiasis among patients from different ages, sexes and residences.

Material and Methods:

A total of 492 Patients of both sexes altending Al-Emam Ali hospital were examined from beginning of June/2013 to end of May/2014. Stool samples from each patient were collected in clean fit cover containers and transported to laboratory of Al-Mousyab Technical Institute under cooling, first examined by naked eyes before microscopiclly examination for colour, consistency, blood and mucous [9], then examined microscopically for presence of *E. histolytica* and *G. lamblia* by direct method using normal saline and lugholes iodine and under high power (40 ×) to detection of trophozoites and cysts of the two parasites above [10]. Statistical examination was done for data by using Chi-squire ($\times^2$) for analysis of the results [11].

Results and Discussion:

The present study showed that prevalence of amoebiasis (23.37%) was higher than giardiasis (16.05%), which found identical with the previous studies in Iraq [2, 3, 12, 13], and attributed that to greater longivity of *E. histolytica* cysts in environmental conditions.

High rate of infection with *E. histolytica* was found in September (41.93%), while high prevalenc of *G. lamblia* was in July (20.93%) Table 1, these results were found in agreement with [4, 5, 12, 13] whom reported that prevalence of amoebiasis and giardiasis increase in the peroid from May to September, this results may be due to increase prevalence and reproduction of many insects that play arole in transmission of these parasites during the 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].

Regarding to residence, rate of infection with amoebiasis and giardiasis in rural areas was more than that in urban areas (Table 2), and may be attributed to contamination of food and drinkable water with feces of rodents, dogs, cats and sheep that play arole as reservoirs for these parasites (born parasites).

The result of this study was found in agreement with [2, 16, 17, 1] whom found that prevalence of amoebiasis and giardiasis was high in rural areas and that may be due to poor of sanitary culture in rural provines.

No. significant differences was found between males and females patients those infected with *E. histolytica* and *G. lamblia*, however rate of infection in males was more

than females (Table 3), the present result was found identical with [6] who found that no significant differences in rate infection with these parasites between males and females patients, its suggested that the two sexes were equaly involved in out and indoor activities which lead to the parasite transmission in both sexes .

The rate of infection with amoebiasis and giardiasis was found increase in patients with old ages. In Basrah [2] found high prevalence of the two parasites above among patients that were more than fourty. Five years old, they attributed the increase of infection in old ages due to deterioration the standred of people hygiene and sanitary condition in this age, or because using of human feces as soil fertilizers which increase chance of spreading infection among horticulturer, whom most of them are of this age group. (Table 4).

The most common stage of amoebisis in the positive samples was mixed stage (trophozoites and cysts together) (53.04%) followed by cyst stage (31.30%) and trophozoites stage (15.65%), this found identical with [6, 18] in Kirkuk and Diyala respectively, most authors attributed the apparent of the mixed stage in case of amoebiasis due to that trophozoites are responsible for acute cases which require emergency treatment, while mixed stage are found in chronic cases which responsible for recurrent diarrhoea. The posative samples of *G. lamblia* had been shown that trophozoites were the most frequent stage (70.88%), followed by mixed stage (24.05%) and cyst stage (5.06%), this may be due to that infection with giardiasis is acute mainly and trophozoites are respousble for this form of infection, other wise [18] found no significant differences between posative samples containing *G. lamblia* stages (Table 5).

Table 1: Distribution of *G. lamblia* and *E. histolytica* infection among patients according to months of the year.

Month	No.examined	positive case of *G. lamblia*		positive case *E. histolytica*	
		No.	%	No.	%
June/2013	43	8	18.6	9	20.93
July	34	9	20.93	5	14.7
August	31	3	9.67	9	29.03
September	31	6	19.35	13	41.93
October	50	5	10	15	30
November	48	8	16.66	11	22.91
December	47	4	8.51	14	29.78
January/2014	34	4	11.76	7	20.58
February	31	4	12.9	8	25.8
March	39	9	20.51	6	17.94
April	40	8	20	9	22.5
May	64	11	17.18	9	14.06
Total	492	79	16.05	115	23.37

Table 2: Distribution of *G. lamblia* and *E. histolytica* among patients according to residence.

residence	No. examined	positive case of *G. lamblia*		positive case *E. histolytica*	
		No.	%	No.	%
rural	256	43	16.8	67	26.3
urban	236	36	15.3	48	20.3 N.s
Total	492	79	16.05	115	23.37

Table 3: Distribution of *G. lamblia* and *E. histolytica* among patients according to the sex.

sex	No. examined	positive case of *G. lamblia*		positive case *E. histolytica*	
		No	%	No	%
Male	225	31	13.3	61	27.1
Female	267	48	14.2	54	20.37 N. s
Total	492	79	16.05	115	23.37

N. s: No significant.

Table 4: Distribution of *G. lamblia* and *E. histolytica* among patients according to the age.

The age	No. examined	positive case of *G. lamblia*		positive case *E. histolytica*	
		No	%	No	%
2 m – 12 y	318	33	10.4	54	16.98
13 – 30 y	108	25	23.1	29	26.85
<30 y	66	21	31.8*	32	48.48*
Total	492	79	16.05		

M : month y: year * $P < 0.05$

Table 5: Distribution of *G. lamblia* and *E. histolytica* among patients according to stage of the parasite.

Parasite	No . examined	Trophozoites		Cysts		Trophozoites + cysts	
		No.	%	No.	%	No.	%
G. lamblia	79	56	70.88**	4	5.06	19	24.05
E. histolytica	115	18	15.65	36	31.30	61	53.05**

** $P< 0.01$

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