

## **Epidemiological study of the intestinal parasites in patients attending two hospitals in Baghdad**

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### **Abstract**

This study has been carried out during the period August 2000 to October 2001 to compare the incidence of intestinal parasites in patients (old and children) who attended Baghdad teaching hospital and Al-Escan central teaching hospital. Three hundred and fifty four stool samples were examined by the direct method using normal physiological saline and logoul's iodine to determine the incidence of the intestinal parasites and its relation with sex and age. The results of this study revealed that the percentage of the total infection of these parasites were higher in patients in Baghdad Teaching Hospital than in those of Al-Escan Central Teaching Hospital ( 60%; 48% ) respectively . Also the rate of infection of the parasites ( Blastocystis hominis, Giardia lamblia, Entamoeba histolytica, Trichomonas honinis and Hyminolepis nana) was (18%, 8%, 29%, 3% and 1%) respectively. It has also been revealed from the result of this work that the rate of male infection was relatively higher than that of female in both hospetals (57%, 55%) and (55%, 36%) respectively. Regarding the age groups, the (61-70) years age group was acquired the highest infection, while the (6-10) year's age group acquired the highest percentage of infection in young patients.

**Key Word:** Intestinal parasite, Patients, Epidemiology

### **Introduction**

The Protozoa are single-celled micro-organisms with simple or complex life cycle. Many can encyst, which provides the means for survival in the environment and for transmission. Person to person spread is usually the result of faeco-oral transmission of the infective stages (1). The effects of an intestinal parasitic infection or enterotoxic diarrhia are on the local and systemic immune response to the toxin (2). Acute diarrheal diseases among infants and children constitute a major health problem in the developing countries (3), it has been estimated that up to 15% of children in the developing nations may die of diarrhoea before 3 years of age. The usual clinical syndrome is characterized by various combination of the following symptoms, which are generally mild with nousea, diarrhoea, vomiting, abdominal cramp and malaise, develop within afew hours of ingestion, diagnosis depends on detection of the cysts in stools(4,5).

The control of the parasitic infection depends primarily on breaking down the chain of the infection for example by preventing contamination of food and water

(1). There are many studies that have been carried out, in Iraq, to dtermine the prevalence or incidence of intestinal parasites (1,2,3,4,5,6,7 and 8).

This study was proposed to know the prevalence of the intestinal parasites among young and old patients in two hospitals in Baghdad.

### **Materials and Methods**

Three hundred and fifty four stool samples were examined for the presence of protozoan intestinal parasites. The examination was performed using saturated salt solution (concentration mmethod) and Iodine stain. These samples were collected from two groups as fellow:

- 1- Two hundred and fifty four stool samples from patients who were older than one year, who attended Baghdad Teaching Hospital.
- 2- One hundred stool samples from patient who were ( 1-13) years who attended Al-Escan Central Teaching Hospitals.

The stool samples were then examined within one hour after the collection under

low power (10x) and high power (40x) of the light microscope.

## Results

The results of this study revealed that there was clear differences of infection, with intestinal parasites, between Baghdad Teaching Hospital patients and Al-Escan Teaching Hospital ones. Table (1) revealed that the percentages of the total infection was 60% in B.T.H and 48% in A.C.T.H. Moreover, the percentages of infection were illustrated in table (2). The infection rate of *E. histolytica* was the highest (36%) then *Blastocystis hominis* (15%), *Giardia lamblia* (8%) and *Trichomonas hominis* (8%).

Regarding the sexes, infection of males was higher than that of females in both hospitals, table (3). It could be noticed in table (4) that the (61-70) years age group was acquired higher infection rate among old patients, while (6-10) years age group was acquired higher infection rate among young ones as it could be indicated in table (5).

## Discussion

It has been revealed in the results of this work that the total infection Rate of the Baghdad Teaching Hospital (BTH) patients with different parasites was higher than those in Al-Escan Hospital (AH). This is due to the following reasons:

1. The patients who attended BTH come from poor areas far away from the health Services and low socio-economical state and crowding population areas. All these factors are considered as important parameters for the infection with these parasites.

2. The patients who attended (BTH) involved different age groups (old and young patients), while those in (AH) were only young children.

Regarding the infection level with various parasites, the infection rate with *Entamoeba histolytica* was higher than that of the others as could be shown in table 2. These results are in agreement with (12).

Regarding the sex ratio, it has been indicated in this work that males are

acquired higher level of infection than females in both hospitals in Baghdad. This might be due to the reason that males are moving actively than females as they have more responsibilities in their living habits outside homes, therefore they are getting in direct contact with environmental factors; this agreed with ( 12 , 13 ).

Regarding the age group, table 4 showed the ( 61-70 ) year age group was required higher level of infection may be the reason that this age group was with low immunity , while the ( 6-10 ) year age was required higher level among children patients , this is due to the reason that these age groups are the school age and are consuming contaminated food and drink during their teaching days, this agrees with ( 5 ) .

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**Table (1):** Illustrates the percentage of the total infection with intestinal parasites between Baghdad Teaching Hospital and Al-Escan Teaching Hospital for Pediatric.

Total no. of samples	Baghdad Teaching Hospital		Saddam Teaching Hospital For Pediatric	
	254		100	
Total Infection	No. of infection	Percentages %	No. of Infection	Percentages %
		142	60%	48

**Table (2):** Illustrates the percentages of infection with different intestinal parasites from the two hospitals.

Type of Parasite	Infected adult		Infected child		Total infection	
	No.	%	No.	%	No.	%
<b>Blastocystis hominis</b>	30	15%	33	21%	63	18%
<b>Giardia lamblia</b>	8	4%	22	14%	30	8%
<b>Entamoeba histolytica</b>	72	36%	31	20%	103	29%
<b>Hymenolypis nana</b>	Nil	Nil	4	3%	4	1%
<b>Trichomonas hominis</b>	8	4%	3	2%	11	3%

**Table (3):** Represents the comparison between the percentages of infection with different parasites from the two hospitals.

Hospital	Total males	Infected males and %	Total females	Infected females and %
<b>B.H.</b>	133	76 57%	121	66 55%
<b>A.H.</b>	64	35 55%	36	13 36%

**Table (4):** Revealed the percentages of infection of the old patients with different intestinal parasites from the two hospitals according to age range.

Age group	Total no. Examined	Total no. infected	Percentage of Infection
14----20 yr	27	18	67%
21----30 yr	80	44	55%
31----40 yr	34	15	44%
41----50 yr	26	18	69%
51-----60 yr	19	10	53%
61-----70 yr	7	6	86%
71---- over yr	7	4	57%
	<b>200</b>	<b>115</b>	

**Table (5)** Reveald the percentages of infection of the young patients with different intestinal parasites from the two hospitals according to age range.

Age group	Baghdad Teaching H .		Al-Escan Teaching H.	
	Total no. Examined	Total no. Infected	Total no. examined	Total no. infected
1----5 yrs	27	8 (30%)	62	29 (47%)
6-----10 yrs	14	10 (71%)	30	15 (50%)
11-----13 yrs	13	9 (69%)	8	4 (50%)
	<b>54</b>	<b>27(5%)</b>	<b>100</b>	<b>48 (48%)</b>