

Prevalence of Amoebic Dysentery Among Population of Wasit Province

Majidah Abdul Khaliq Ali & Shaima'a Shakir Hameed
Mohammed Kasim
Wasit Uni./ College of Medicine

انتشار مرض الزحار الأميبي بين السكان في محافظة واسط

ماجدة عبدالخالق علي & شيماء شاكر حميد & محمد قاسم
جامعة واسط / كلية الطب

الخلاصة:

تم إجراء الفحص المجهرى ل ٦٠٠ عينة براز لأشخاص دخلوا مستشفى الكرامة في محافظة واسط للفترة من شهر تشرين الأول ٢٠٠٩ ولغاية شهر شباط من العام ٢٠١٠ للتحري عن طفيلي أميبا النسيج المسبب لمرض الزحار الأميبي. بلغت عدد العينات المصابة (الموجبة) ٦٠ عينة (١٠%). كانت نسبة انتشار الطفيلي أكبر بين الأعمار (١ يوم- ١٠ سنة) كما أشارت الدراسة الى عدم وجود فروقات معنوية بين الذكور والإناث. بينت الدراسة بأن نسبة الإصابة كانت أكبر بين الأشخاص الذين يعيشون في المناطق الريفية عما في المدينة، كما سجل شهر كانون الأول اعلى الأصابات وشهر تشرين الأول أدناها.

Abstract :-

A microscopic examination of multiple faeces samples of 600 persons was carried out in Al-Karama hospital, Wasit province from October 2009 to February 2010. Overall prevalence of *Entamoeba histolytica* was 60(10%). Prevalence increased rapidly in age group (1 day-10 year) and there were no real differences between males and females. Prevalence was higher among families who live in rural areas than those in urban areas. The highest infection rate was recorded in December and the lowest was recorded in October.

Introduction :-

The parasitic infections caused by intestinal helminthes and protozoan parasites are among the most prevalent infections in human in developing countries (8). In developed countries, protozoan parasites more commonly cause gastrointestinal infections compared to helminths. Intestinal parasites cause a significant morbidity

and mortality in endemic countries(5). The most common intestinal protozoan parasites are: *Giardia intestinalis*, *Entamoeba histolytica*, *Cyclospora cayatanensis*, and *Cryptosporidium* spp. The diseases caused by these intestinal protozoan parasites are known as giardiasis, amoebiasis, cyclosporiasis, and cryptosporidiosis respectively, and they are associated with diarrhoea (4).

Amoebiasis is worldwide in distribution and continues to be an important public health problem(3). This parasite is transmitted to humans via contaminated water and food. Intestinal amoebiasis may be present as dysentery (inflammation of the intestine) with ulcers in the colon, diarrhea or may stimulate other intra-abdominal conditions like amoebic infection of the liver and other organs (2). Clinical symptoms are not seen in majority of patients, while amoebic cysts are passed in the stool (11). Some times amoebiasis may also stimulate idiopathic ulcerative colitis (10). The diagnosis of amoebiasis is often difficult and time consuming. The main purpose of detection and differentiation of *E. histolytica* species in stool samples is the detection of the causative agent of amoebic dysentery. About 40–50 million people develop clinical amoebiasis each year, resulting on up to 100, 000 deaths(9). The causative agent of amoebic colitis and liver abscess is *E. histolytica*. The purpose of the study was to find out the epidemiological characteristic of *E. histolytica* in this area by the simplest method for diagnosis.

MATERIALS AND METHODS :-

From October 2009 to February 2010, sixty cases of amoebiasis attending the parasitological Unit of Al-Karama hospital of Wasit province were investigated in this study. They were of both sexes and their ages ranged between 1 day to 50 years. The diagnosis of these patients was established on the basis of thorough clinical examination. In all these cases stool samples were found positive for *Entamoeba histolytica*. Normal healthy of similar age and sex were also included as controls. For microscopy, each stool sample should be divided into two portions. Direct microscopy should be done by mixing a small amount of the specimen in 0.9% sodium chloride solution (wet amount) . This allows the detection of motile trophozoites of *Entamoeba histolytica* and can also provide information on the contents of the stool, that is, the presence of leucocytes and red blood cells. The second portion of the stool sample is then stained with Lugol's iodine solution to identify trophozoites and cysts. Trophozoites containing ingested RBCs are more common with *E. histolytica* than cyst(6).

Results and Discussion :-

A study on the prevalence of *E.histolytica* in Wasit province, Iraq was made, from October 2009 to February 2010. The patients were divided into five groups(1, 2, 3, 4, 5) according to age (1day-10), (11-20), (21-30),(31-40), and (41-50) years, respectively.

Table (1) shows the distribution of positive cases in according to the age and gender groups. These results showed the highest infection were 0.028% in group 1(1day-10) years and the lowest 0.015% in group 2 (11-20). The infection was detected in both sexes with a predominance in males. The age-related and sex differences in prevalence of *E.histolytica* are in agreement with pattern of infection in previous studies (8,1). Infection with *E.histolytica*, on the other hand, was found to increase with age, reaching its highest in early age (7). Probably, indicating reduced parental personal,eating habit and activities linked with soil contaminated with infected fecal matters. *Khan et al.*,1993 in Pakistan reported that highest incidence of infection was observed in children aged between (4-9)years.

Table(1) Prevalence of Amoebic Dysentery in According to Age and Gender Groups

Age / Year	Male +Ve	%	Female +Ve	%	Total	%
Group 1(day-10)	11	0.018	6	0.010	17	0.028
Group 2 (11-20)	5	0.008	4	0.007	9	0.015
Group 3 (21-30)	7	0.012	4	0.007	11	0.015
Group 4 (31-40)	6	0.010	6	0.010	12	0.020
Group 5 (41-50)	5	0.008	6	0.010	11	0.018
Total	34	0.057	26	0.043	60	0.100

Table(2) represent the monthly distribution of infection. These results showed the highest infection in December (0.038%) and the lowest in October (0.008%).

Table (2) Monthly Distribution of Cases

Months	Case +Ve	%	Case -Ve	%	Total	%
October	5	0.008	60	0.100	65	0.108
November	11	0.018	69	0.119	80	0.133
December	23	0.038	182	0.303	205	0.342
January	12	0.020	85	0.142	97	0.162
February	11	0.018	144	0.240	155	0.258
Total	60	0.100	540	0.900	600	1.000

Table (3) shows the distribution of positive cases according to the age and district groups. These results showed the higher infection in rural areas 35 (0.058%) than urban 25 (0.042%), and in group 1 (0.028%) more than others. Probably, it can be ascribed to: reduced parental personal, eating habit and activities linked with soil contaminated with infected fecal matters. Previous studies had attributed the high endemicity to poor environmental and personal hygiene, shortage of good water supply, and toilet habits (9).

Table (3) Distribution of Positive Cases According to Age and District Groups

Age / Year	Urban +Ve	%	Rural +Ve	%	Total	%
Group 1 (day-10)	4	0.006	13	0.022	17	0.028
Group 2 (11-20)	5	0.008	4	0.007	9	0.015
Group 3 (21-30)	4	0.006	7	0.012	11	0.015
Group 4 (31-40)	6	0.010	6	0.010	12	0.020
Group 5 (41-50)	6	0.010	5	0.008	11	0.018
Total	25	0.042	35	0.058	60	1.000

Conclusion :

- 1- The present study has revolutionized our understanding of the epidemiology of *Entamoeba histolytica* infections and has led to important treatment and diagnostic recommendations.
- 2- To avoid unnecessary and possibly harmful therapies, clinicians should follow the precise guidelines, including definitive differentiation of *E. histolytica* from morphologically identical nonpathogenic species.
- 3- Infection with *E. histolytica* was found to increase with age reaching its highest in early age.
- 4- This study had attributed the high endemicity to poor environmental and personal hygiene, shortage of good water supply and toilet habits.

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Recived (11/4/2010)
Accepted (9/8 /2010)