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A Study on the Prevalence of Infection with some Intestinal Parasites in Qena Governorate

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Abstract: ***This study aimed to find the prevalence of Entamoebahistolytica and Giardia lambilia infections in Qena Province – Egypt, by using the microscopic methods. The study was conducted on the (150) stool samples from diarrhea - suffering patients. Patients ranged in age (1 to larger than 50) years old and from both sexes and different regions to estimate the prevalence of someintestinal parasitic diseases in the general population using data from private laboratories in Qena Province, using the microscopic methods to distinguish between Entamoebahistolytica and Giardia lambilia infections. The most common parasite was Entamoebahistolytica (90%) and Giardia lambilia was (40%). With regard to sex (54.1%) of males, (45.9%) of females patients have Entamoebahistolytica in supplements. In conclusion Entamoebahistolytica often occurs more flammable supplements than usual. While the infection with parasite Giardia lambiliain females was (61.7 %) larger than in males (38.3 %).***

1. Introduction

Intestinal parasites are parasitic primordial organisms that live in the human intestines and feed on digested food and blood and cause serious diseases that affect his health greatly. The most important of these parasites are *EntamoebaHistolytica*, *Enteribiusvermicularis* and *Giardia lamblia*.

Different intestinal parasites, whether intestinal protozoa, such as *EntamoebaHistolytica*and *Giardia lamblia*, or *Ascaris*sp. or *Taenia* sp. are considered the most widespread parasites on the world level in general and in the third world in particular, as their spread is not related to the Vector hosts, Environmental conditions such as high temperature and excess humidity, in addition to poor economic and social conditions such as poverty, lack of clean water supply and low level of health services increase the prevalence of intestinal parasites and reduce the chances of controling them or eliminate diseases that cause (Dieng*et al*., 1999).

According to the World Health Organization (WHO), the incidence of amoebic dysentery varies from 5% of the population in developed industrialized countries to areas with good health conditions, reaching more than 60%, especially in children in some tropical regions and poor countries with severe in clean water and apparent lack of health services (Dieng*et al*., 1999). The total number of patients with amoebic dysentery is about half a billion people in the world concentrated in the Third World (Thompson, et al., 1990 & 2001).

Several studies have shown that most people with intestinal parasites are children or Adults, a study in Malaysia showed that intestinal parasites were present in at least 39% of patients aged from 2 to 12 years, accounting for 89% of the patients (Lervy et et. al., 1998)

Intestinal parasites affect approximately 3.5 billion people worldwide and are a public health problem, especially in developing countries, where almost one-third of the populations live in conditions favorable to their dissemination. Amebiasis is the second most frequent parasitic disease, causing around 100,000 deaths each year and contributing towards the high global burden of diarrhea, notably in regions with low economic development and settings with poor sanitation (Juliana de Oliveira Costa *et al*, 2018).

Entamoebavermicularis has a worldwide distribution and is one of the most common parasitic helminth infections in the developed world (Cook and Zuma, 2003). It is estimated that 400 million people are infected with diphtheria all over the world (Stephan *et al*. 2006).Appendicitis is the most common acute surgical condition for the abdominal emergency in the Western world, which occurs in 7-12% of the general population (Baert, 1999).

In Nepal, a total of 624 diagnosed cases were identified (1.62%) of patients with clinical diagnosis of appendicitis. *Entamoebavermicularis* was often found in non-flammable and histologically normal supplements (8.45%) of those that were inflamed with histopathological changes of acute appendicitis (0.56%) (Sah and Bhadani, 2006).

Another study was conducted in Iran involving 5048 samples. *E. vermicularis* was found in 144 patients (2.9%) of appendicitis patients (Ramezani and Dehghani, 2007).

In the UK, an evaluation of histological materials obtained from all accessories removed during the past 5 years was carried out at Bristol's Southamid Hospital. *E. vermicularis* was identified in 2.7% of patients with clinical appendicitis (Pod and Armstrong (1987).The simple presence of *E. vermicularis* in the bowel often results in symptoms similar to acute appendicitis, although the mechanism does not include mucus invasion by the parasite (Sah and Bhadani, 2006). While Gutiérrez, (2000) asserts that there is consensus that pinworms do not produce inflammatory response. Burckhart, (2005) mentioned that the infection of pinworm causes the symptoms of appendicitis on the surface.

The prevalence of intestinal parasites was determined for 150 patients in Qena Province, During the period from the first of June to the 15th of August 2018. Ranging in age from 1 to larger than 50 years old. For fecal samples, microscope was used to identify the presence of parasites

and buoyancy techniques. Various types of intestinal parasites were detected. during this study.

2. Materials and Methods

- 150 clinical samples were collected from patients and private laboratories in Qena Governorate, from June 1 to August 15, 2018. These samples were stored with ethyl alcohol by 70%.
- These worms were isolated using float method, then loaded onto glass slides and covered with Canada Balsam and dried in the oven.
- The worms samples were photographed using a camera

3. Results

Table 1: The prevalence of *Entamoeba Histolytica* and *Giardia lambilia* in the study samples

Parasitic infection	*Entamoebahistolytica*	*Giardia lambilia*
Repetition	135	60
The ratio	90 %	40 %

Table (1) shows the prevalence of parasites among the patients studied. It shows that the infection of the parasite *Entamoebahistolytica* in 135 patients in the rate of 90% and the parasite *Girdialambilia* affected60 of the patients in the rate of 40%.

Table 2: Illustrates the relationship between age and parasitic infection parasites *Entamoeba Histolytica* and *Giardia lambilia* in the study samples.

The age	*Entamoebahistolytica*		*Giardia lambilia*	
	Repetition	The ratio	Repetition	The ratio
Less than 10	65	48.1 %	28	46.7 %
From 10 – 30	38	28.1 %	18	30 %
From 30 – 50	23	17 %	9	15 %
Larger than 50	9	6.8 %	5	8.3 %
Total	135	100 %	60	100 %

Table (2) shows the relationship between the age of the patients in the study and the prevalence and percentage of infection of the parasite *Entamoebahistolytica*, where it shows that the number of infection in this parasite at the age less than 10 years 65 cases, with percentage 48.1%. At the age of 10 to 30 years, the incidence was 38, with percentage 28.1%. At age of 30 to 50 years, infection was 23, with percentage 17%, and at the age larger than 50, the incidence was 9 with percentage 6.8%.

Table (2) shows the relationship between the age of the studied patients and the prevalence rate and percentage of the infection of the parasite *Girdialambilia*, where the number of infection with this parasite in the age of less than 10 years was 28% with percentage46.7% and at the age of 10 to 30 years was 18with percentage 30% and at age 30 to 50 years, the infection was 9with percentage 15%, and at age larger than 50, the incidence was 5with percentage8.3%

Table 3: Shows the relationship between sex and parasitic infection *Entamoeba Histolytica* and *Giardia lambilia* in the study samples

Sex	*Entamoebahistolytica*		*Giardia lambilia*	
	Repetition	The ratio	Repetition	The ratio
Male	73	54.1 %	37	61.7 %
Female	62	45.9 %	23	38.3 %
Total	135	100 %	60	100 %

Table (3) shows the relationship between the sex of the studied patients and the prevalence and percentage of infection of parasites parasite. The number of infection with the parasite *Entamoebahistolytica* in the males was 73 with percentage 54.1%, while the number of infection in the females was 62 with percentage 45.9 %. The number of infection with the parasite *Giardia lambilia* in the males was 37 with percentage 61.7%, while the number of infection in the females was 23with percentage 38.3 %.

Figure 1: *Entamoebahistolytica*

Figure 2: *Entamoebahistolytica*

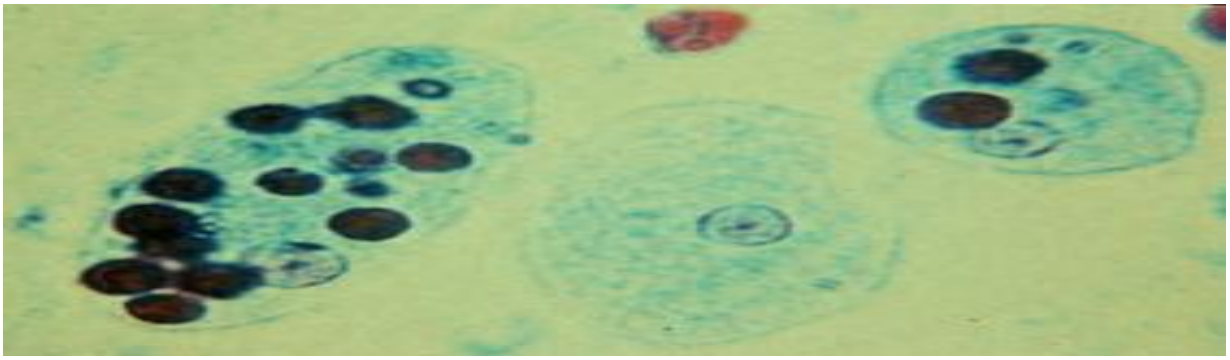

Figure 3: Photo of the *Entamoebahistolytica*

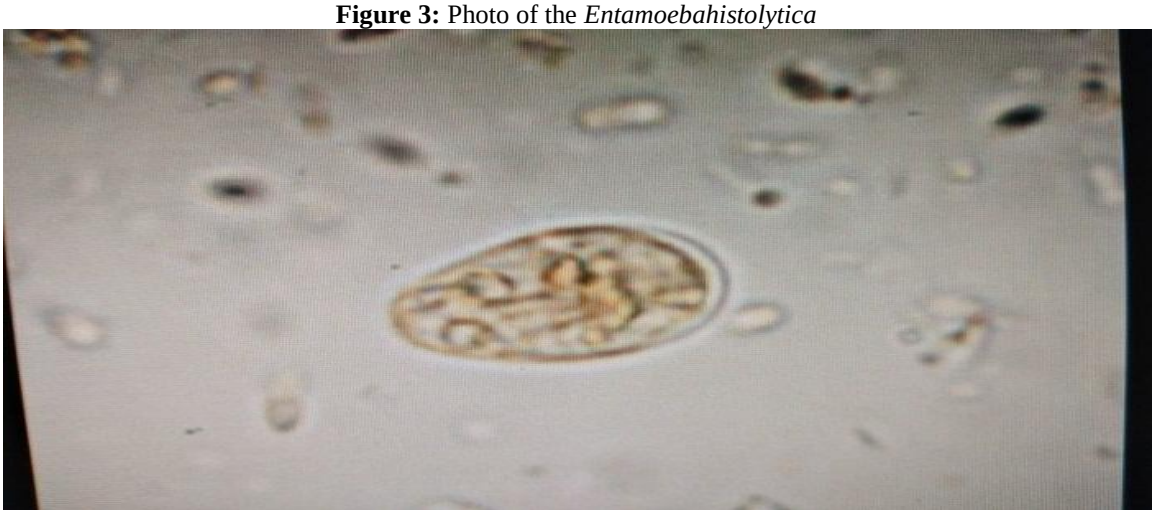

Figure 4: Photo of the *Giardia lambilia* (trophozoite)

Figure 5: Photo of the *Giardia lambilia* (cyst)

4. Discussion

The results of the current study show that the incidence of infection varies from one parasite to another and that the most common disease among the patients is the parasite *Entamoebahistolytica*, where the incidence of about 90% compared with *Giardia lamblia* parasite, where the rate of infection was about 40%. These results are higher than the results obtained by (Rayan*et al.*, 2010) in their study of intestinal parasites in Australia (4.2%) for the group of children ages 5 to 11 years. (Al-Harthe*et al.*, 2004) in their study of the prevalence of intestinal parasites among school children between the ages of 7 to 12 years in Mecca, Saudi Arabia, where the percentage of infection with *Entamoebahistolytica* 1.01%, and this study agrees with the results of (Al-Fahdawy, 2007) where he confirmed that the most common parasites is *Entamoebahistolytica* by 26.4%.

The cause of the spread of parasitic infection is that it is transmitted directly through contaminated food and water, as well as lack of attention to personal hygiene and the spread of pollutants in food and drinking water.The infection rate was 61.21% and higher than recorded by (Al-Issa*et al.*, 1986), where the infection rate was 21.5%.

The study found that the highest incidence of *Entamoebahistolytica* and *Giardia lambilia* were in the patients less than 10 years, i.e, children and school students, due to the lack of health awareness and lack of understanding of the risk of such parasites and the possibility of transmission of infection between Children and schoolchildren during play and low immunity. These results agree with with that recorded by (Al-Khafagy, 1999) in Babylon and (Al-Nahy, 1998) in Najaf, Iraq.

5. Acknowledgment

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