



ISOLATION AND DIAGNOSIS PARASITIC ETIOLOGY OF GASTROINTESTINAL INFECTION OF PATIENTS AT THE AL-MWANEE HOSPITAL IN BASRA CITY SOUTHERN OF IRAQ

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Abstract

The worm and Protozoan parasites live in the gastrointestinal tract. Infections of the gastrointestinal tract in the form of, enteritis, gastroenteritis or enter colitis. The diarrhoea, and dysentery are common for certain intestinal parasites, such as *Giardia lamblia* (Giardia intestinalis Giali), *Cryptosporidium hominis* or *Cryptosporidium parvum* and *Entamoeba histolytica* among others. During February to the December 2019 a study was carried out on 300 patients (male and female) they suffer from pain in the Abdominal and Diarrhea discomfort. The aim of this study is to isolate and diagnose the parasitic etiology of gastrointestinal infection of patients in Al-Mwanee Teaching Hospital in Basra City in southern Iraq.

Keywords: *Entamoeba histolytica*, Phosphate buffered saline, Acquired Immune Deficiency Syndrome

Introduction

Parasites affect the work of the gastrointestinal tract. Parasites can be transmitted to humans in several ways, including water and food contaminated with the faces of the infected person or scratching the exit with the finger and taking the soil contaminated with the stool of the infected and eating infected as in the case of tapeworm cow is the most affected intestines, especially the large intestine and part Zigzag them because of the slow movement which gives the parasite the opportunity to attack the mucous layer causing inflammation and disease lesions (Bruce *et al.*, 1990; Ackers and Mirelman, 2006). The degree of harm and pathology caused by the parasite to its host depends on the size, number, and effectiveness of the parasite in the host so that effect of some intestinal nematodes is relatively low compared to histology. (Hadithi and Abdul Hussein, 2015).

The presence of the parasite obstructs the functions of the host body physiologically, human infection with tapeworm *Diphyllobothrium latum*, which absorbs large amounts of vitamin B12 lead to vitamin deficiency in the body and thus anemia, as well as some parasites, occur an inflammatory reaction or malignant tumors such as pneumonia and the formation of papillomata papillae by blood fissures In the rectum and bladder. (Roberts and Janovy, 1996) Malnutrition, marital status, age and weight affect the high incidence of intestinal protozoa, including *Entamoeba histolytica* (Houston, 2006). The risk of developing amoebiasis in people who carry the disease in moderate places where the infection is asymptomatic and carriers of the disease subtract Millions of bags daily from what is a source of infection (Ham and Kaunitz, 2008). There are three types of Protozoan infection: *Entamoeba histolytica*, *Giardia intestinalis*, *Cryptosporidium parvum*. These three types can cause diarrhea.

Entamoeba histolytica was considered that infections with *E. histolytica* could be asymptomatic or pathogenic, with dysentery a key symptom when the amoebae invaded the mucous involved two species are: *E. histolytica* being invasive and *E. disbar* being non-invasive (O'Brien and

Halder, 2007). These stages Reproduction is by simple binary fission and there is the periodic formation of resistant encysted forms which pass out of the body (Phillips, 2008). The cysts act as the infective stages can survive in the external environment. Infection occurs when food is contaminated or the drink is contaminated, or when contaminated food handlers or sanitation is sometimes inappropriate. A small percentage develops dysentery, ameboma (mass of inflammatory tissue which can simulate ameba liver abscess or colon cancer). Once infected, IgA (since the organism is located in the intestinal tract) and cell-mediated immunity are activated against the organism. *Giardia intestinalis* microorganism in the United States of America the most commonly diagnosed intestinal parasite and was the first to be observed under a microscope (Radford *et al.*, 2004). It has a global distribution and is a frequent cause of traveler's diarrhea, having been detected in both drinking and recreational water. Cryptosporidia: ranges diarrhoea from moderate to severe. Infection with *Cryptosporidium* Symptoms range from mild diarrhea to severe prolonged diarrhea in individuals with immunodeficiency (permanent days), which may become chronic in patients with immunodeficiency in people with cryptosporidiosis infection is common (Bush *et al.*, 2001).

Material and Methods

- 1-Wooden sticks
- 2-Cover slide
- 3-slide
- 4- Microscope
- 5-Normal saline 0.9%
- 6-1% Iodine

Microscopic Examination

A small piece of each sample was taken, placed on glass slides, a drop of saline (PBS) was added and the mixture was thoroughly mixed with wooden sticks. The

cover was placed on the slides and examined under a microscope with a 40 X lens.

Result and Discussion

A total of 300 different stool samples were studied, where the intestinal parasites were found in 85 (28.33%) patients and the infection of males was 51 (17%) and female 34(11.3%). The results in Table 1 Show Number of patients samples and positive and negative Percentage of parasitic infection. The results in Table2 show the number of infected men with intestinal parasites higher than women. Whereas Table 3 shows the age distribution of intestinal parasitic infection. Results showed an increase in the of parasite infection *E. histolytica* than other parasites and the Table4 the rate infected intestinal parasites isolated from stool smears. Table5 shows the Numbers and type of infection with intestinal parasites.

*The present study was subjected to statistical analysis using the Kai square and the statistical differences were compared with SAS and Duncan test.

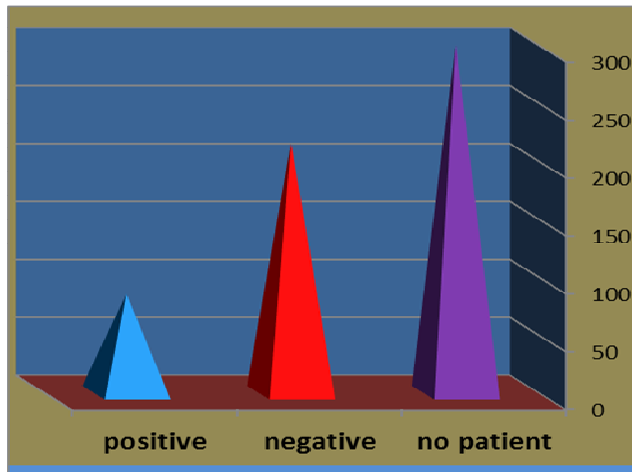


Table 1 : Show Number of patients samples and positive and negative Percentage of parasitic infection

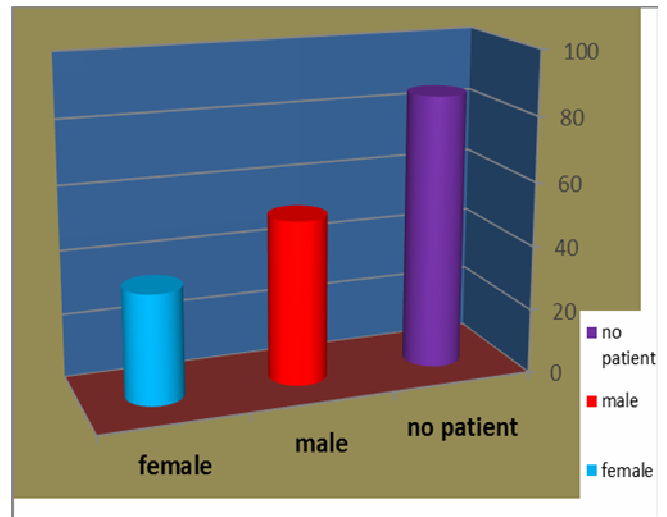


Table 2 : Show the number of positive of parasitic infection For male & female

Table 3 : Age distribution of gastrointestinal parasitic infection:

| Age in years | Negative | Positive | Total |
|--------------|----------|----------|-------|
| 2-5 | 70 | 20 | 90 |
| 6-10 | 35 | 22 | 57 |
| 11-15 | 18 | 9 | 27 |
| 16-20 | 30 | 10 | 40 |
| 21-25 | 16 | 8 | 24 |
| 26-30 | 15 | 4 | 19 |
| 31-35 | 4 | 6 | 10 |
| 36-40 | 7 | 0 | 7 |
| 40-50 | 12 | 4 | 61 |
| 50-60 | 8 | 2 | 10 |
| | 215 | 85 | 300 |

Table 4 : The rate infected intestinal parasites isolated from stool smears:

| No | Case | Number of males | Percentage | Number of female | Percentage | Total | Percentage |
|----|-----------------------------------|-----------------|------------|------------------|------------|-------|------------|
| 1 | Infection of intestinal parasites | 51 | 17% | 34 | %11.3 | %85 | 28.33% |

Table 5 : Numbers and type of infection with intestinal parasites:

| No | Type of parasite | Cyst or trophozoite | Male No. | Female No. |
|----|------------------------------|---------------------|----------|------------|
| 1- | <i>Entamoeba histolytica</i> | Cyst | 36 | 25 |
| | | Trophozoite | 3 | 4 |
| 2- | <i>Giardia lamblia</i> | Cyst | 8 | 2 |
| | | Trophozoite | 2 | 3 |
| 3- | <i>Hymenolepis nana</i> | Cyst | 1 | - |
| | | Trophozoite | 1 | - |

Conclusions

A total of 300 different stool samples were studied, where the intestinal parasites were found in 85 (28.33%) patients and the infection of males was 51 (17%) and females 34 (11.3%). The study showed an increase in the infection of males compared to females. The increase may be attributed to the high intake of

fast food foods that do not comply with health conditions. In addition, swimming in ponds and rivers. The study also showed more infection in younger age groups due to non-compliance with the health instructions from eating, washing hands, drinking and drinking contaminated water sometimes. The study also showed the risk of infection in women due to the active phase (Trophozoite). Also, the nature of the

stool in the patients with cystic phases was more solid compared to the active phases, suggesting risk to patients due to intestinal parasites. Also Table 3 showed the he most parasitic infections were in the age groups (6-10) years, as well as the age group (2-5) years, then the age group (16-20), followed by the age group (11-15), followed by the age group (21-25) years, While the number of parasitic infections decreased in the categories Elderly Also Table 4 showed the rate infected intestinal parasites isolated from stool smears and Table 5 showed the one infection by parasite Hymenolepis Nana I only have one person. And The Table 5 also showed The infection increase male infection by cyst Giardia Lambia by compared to females. The study showed an increase in the incidence of people eating unhealthy foods or fast food, in addition to drinking unsterilized water in addition to not following a good health system in most restaurants located near the study area and its vicinity.

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