



A comparative study of some intestinal parasites in Babil, and Al-Kifl City

Riyadh Hatim Haddawee

College of Applied Medical Sciences, Kerbala University, Iraq

Abstract

Our current research included the study of two types of intestinal parasites, which are usually protozoa; (such as *Giardia*), and worms; (such as *tapeworms* or *pinworms*) that get into almost number of child's body and use the intestines as shelter. These comparative study of intestinal parasite infection occurs between a hospital in the center of Babylon city, and a hospital Al-Kifl City during the period 1/1/2020_31/12/2020. These classes of parasites are live in the intestine, or other parts of the body and often multiply. They may or may not cause symptoms, and are very common all over the world. There are many parasites and germs that can cause contamination of the human intestine, the most prominent of which are: *Amoeba*, *Candida albicans*, *Helicobacter pylori*, *Blastocystis*, *intestinal worms*, parasites, and others.

Keywords: intestinal parasites, protozoa, and worms

Introduction

Intestinal parasites are the most widespread pathogens all over the world, as about (0.3 billion) people are infected by many number of the intestinal parasites, the majority of whom are children ^[1]. There are two categories of intestinal parasites; parasitic protozoa (unicellular), and parasitic helminthes (multicellular) which have body systems and other means that enable them to live parasitic ^[2]. The expansion rates of parasitic infections are high in tropical and semi tropical areas because of their fitted climatic conditions for the continuation and evolution of the stages the parasites go via their life cycle, like (temperature, soil nature, humidity, and other environmental factors ^[3]. The economic and social conditions have a evident impact on the prevalence of the infection with intestinal parasites. It has been watched that individuals whose are in crowded places with an unsuitable health and environmental system are high vulnerable to the parasitic infection than others. The deficiency of municipal maintained and unhealthy rubbish disposal and the reduce of suitable housing, it's one of the spread reasons of intestinal parasites as well ^[4]. Children are often high liable to infections with parasites of all, and intestinal parasites in specific for many causes, including deficiency of health realization and deficiency of attention to common hygiene, as well as the reducing in the immune response contrasted to adults ^[5]. The intestinal parasitic infection causes different health problems such as anemia, which a high rate of people suffer from in the world, they reached about 1-billion people, with knowing that the anemia lead to Iron deficiency, folic acid deficiency, or B-12 vitamin deficiency, all this problems caused by the intestinal parasitic infection. Diarrhea is a serious disease that caused by the intestinal parasitic infections, there was noted that more than (2.3 million) death among children of the age less than 20 years, particularly in the developing countries ^[6]. Epidemic intestinal parasites can infect the intestines through the mouth by eating foods that have not been washed well or cooked well, or those that are washed with contaminated water or the hands may not be clean. Poisoned food may be a source of infection with intestinal parasites as a catalyst, or infection with intestinal parasites may be through the skin during insect bites. Therefore, maintaining hygiene is very important, while not maintaining hygiene to the required extent after exiting the toilets leads to the inevitable infection of intestinal parasites, while eating raw food, especially meat, and drinking contaminated water, among others, is one of the main causes of infection.

Methodology

Our research was conducted in a hospital in Babel Center, the sample collected from (Maternity and Pediatrics section), and in a hospital in the city district called Al-kifil General Hospital, during the period 1/1/2020_31/12/2020. It's clear from the statistical study according the data that obtained, it is clear that the infection rate in the region is the highest and the infection rate in the months of (May and June) was the highest. The high infection rate in the district is due to providing a suitable environment for the parasite, as well as reducing health awareness and eating contaminated food and unsafe water compared to the low infection rate in the city.

The study was conducted to compare infections in intestinal parasites located between the center and district of Babylon Governorate in the maternity hospital and the mother located in the city center and Al-Kifl Hospital located in the city district. It included obtaining parasite infection statistics and the total number of infected people who visited the laboratory unit to know the percentage and type of parasite. It also included information about the patient (age, gender, and type of injury) during the period from 1/1/2020 to 31/1/2020.

Results

Table 1: Statistics of Intestinal parasites in Al- Kifl Hospital

Sick rate%	Number of sufferer(sick)	Number of examined	Month
1.54	12	65	January
2.7	21	60	February
1.4	11	45	March
2.83	22	72	April
4.5	35	95	May
3.5	27	87	June
1.4	11	21	July
0.77	6	17	August
1.15	9	32	September
0.89	7	57	October
2.57	20	102	November
2.57	20	125	December
25.8	201	778	Final total

Table 2: Statistics of Intestinal parasites in Maternity and children's

Sick rate%	Number of sufferer(sick)	Number of examined	Month
0.31	3	159	January
0.1	1	98	February
0.1	1	58	March
0.1	1	53	April
0.1	1	80	May
0.21	2	53	June
0.1	1	37	July
0.1	1	28	August
0.41	4	54	September
0	0	79	October
0.31	3	121	November
0.31	3	151	December
2.16	21	971	Final total

Table 3: Comparison between Outskirts Al-Kifl and City center of Babil

Sick rate%	Number of sufferer(sick)	Number of examined	Accommodatoin location
25.8	201	778	outskirts
2.16	21	971	City center

Table 4: Al -Kifl Hospital Statistics results for every month

December	November	October	September	August	July	June	May	April	March	February	January	Parasite
16	18.6	10.53	25	29.4	52.4	27.58	34.7	26.4	24.4	33.3	18.5	E. histolytica
0	0.98	1.75	3.13	5.88	0	2.3	2.11	4.16	0	0	0	G. lambilia
0	0	0	0	0	0	1.15	0	0	0	1.6	0	H.nana

Table 5: Maternity and children's Hospital Statistics results for every month

December	November	October	September	August	July	June	May	April	March	February	January	Parasite
0.6	1.6	0	0.3	0.3	0.2	0.3	0.12	0	1.7	0.1	0.12	E. histolytica
1.3	0.8	0	0.5	0	0	0	0	1.8	0	0	1.8	G. lambilia
0	0	0	0	0	0	0	0	0	0	0	0	H. nana

Table 6: Types and numbers of intestinal parasites and infection rates for each parasite during the year 2020

Rates	N. of infection in Maternity and children's	Rates	N. of infection in Al-Kifil	Parasite name	Intestinal parasites
% 1.64	16	%24.2	188	Entamoeba histolytica	Parasitic protozoa
% 1.34	13	%1.41	11	Giardia Lambilia	
0	0	%0.26	2	Hymenolepis nana	Parasitic Helminthes

Discussion

The results of the current study showed that people were infected with three types of intestinal parasites, the most common of which was the amoeba *E.histolytica* in Al-Kifl Hospital, the infection rate was 24.2%, and the Maternity and Children Hospital was 1.64%, followed by *Giardia* parasite in Al-Kifl Hospital, which amounted to 1.41%, and the Maternity and Children Hospital It reached 1.34%, then the parasite *H.nana* was only recorded in Al-Kifl Hospital, with a rate of 0.26%, and this confirms what [7, 8, 9], went to in his study, in which he showed that the rate of infection with the amoeba *E.histolytica* is the highest infection, reaching (26.4%) And the reason for the wide spread of this parasite is due to several reasons, including the direct method of transmission through food and water and the contribution of flies, which are carriers of the parasite [10] and insufficient attention to

hygiene and the low social and cultural level, followed by *G. lamblia*, which reached a rate of infection (9.5%), and the same researcher mentioned the reason for the high rate of infection is due to the absence of an effect of sterilizing drinking water, most of whose residents depend on the water of secondary rivers and streams that extend through agricultural fields, where sheep breeders frequent them to water their livestock and animals such as dogs.

As for the reasons for the spread of the parasite *E. histolytica* in the highest percentage in both children and adults, it may be due to the fact that people eat contaminated vegetables. The rate of infection with *G. lamblia* was recorded at (11.1%), and similar rates were recorded by many researchers [11]. The results showed that the rate of infection in the districts is higher than the center, and this result is consistent with the results reached by many studies of the epidemiology of intestinal parasites in Al-Diwaniyah Teaching Hospital in Al-Diwaniyah city, and it is also consistent with the findings in a comparative study of parasitic infections among the residents of Al-Diwaniyah city. And the residents of Ghammas district, where the infection rate in the district was much higher than the center due to the lack of sanitation services, the lack of drinking sterilized water [12, 13, 14]. The results confirmed that the rate of infection with one type of parasite is more common than joint infections, as it was (27.96%), while the percentage of bilateral infection was (0.3%), and this agrees with many researchers, as is the case with (15.1) in the studies that were conducted in Tourij district in Karbala city and in Dulab village in Babil city, the reason may be attributed to the availability of suitable conditions for the growth and development of some parasites such as *E. histolytica* more than others [15]. It is clear to us through the study that was conducted and the differences shown in the results that there is a regional variation in intestinal parasite infections, and this variation is not only between one hospital and another, but the difference is clear in infections between rural and city residents, as the infections in the rural population is more than it is in the city, and the reasons for this discrepancy are many, perhaps environmental pollution on the one hand and lack of awareness on the other. Therefore, one of the results of injuries and their complications and what is related to them is anemia, for example, in addition to other related diseases [16].

Recommendations

Parents teach children to wash hands, especially after leaving the bathroom.

Since pinworms are sensitive to light, open curtains and windows to allow light to enter during the day.

Since some parasites survive after freezing, ice cubes can sometimes transmit disease, unless these cubes are made of pure water. Information about precautions for specific areas is available on the CDC's Travelers' Health page.

Using more modern methods in research and studies to detect common infections between humans and animals, especially with regard to parasitic infections, such as PCR-

5_ studies showing the spread of amoeba species in animals and water using modern methods and studying the pathological impact and virulence of these parasites.

Conclusion

We conclude through our current research that there are several factors that contribute to the infection of intestinal parasites, including (environmental pollution, lack of hygiene, lack of awareness or neglect) that leads to confirmed infection with epidemic intestinal parasites, and these factors are more in rural areas than in cities. We also conclude that there are multiple and diverse types of parasites that infect the intestines, in addition to that there is a difference in the percentage of intestinal parasite infections according to age and gender during the months of the year. Therefore, a recurring statistical system must be established annually to study and document cases in order to treat them and make appropriate decisions to that represented in developing the health reality.

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