التحري عن انتشار الاوالي المعوية بين العاملين في المجال الصحي

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المستخلص

هدفت هذه الدراسة إلى تحديد مدى انتشار الأمراض الناجمة عن الطفيليات المعوية في موظفي المستشفى التعليمي في الديوانية ومستشفى الولادة والأطفال، والتعرف على العلاقة بين الموظفين والنظافة الشخصية وهذه الأمراض. وجرى تصميم هذا البحث من أجل تحقيق الأهداف المحددة في وقت مبكر للفترة من تشرين الثاني 2015- اذار 2016. تم جمع (120) عينة من البراز من العاملين في مجال الصحة في مستشفى الديوانية التعليمي، ومستشفى الولادة والأطفال وبمعدل (20 عينة) لكل شهر من شهور الدراسة. وقد أظهرت نتائج الدراسة ان الاصابة بالاميبا الحالة للنسيج كانت (36 حالة) والتي تمثل (43.2٪)، وكان أعلى معدل للإصابة خلال شهر تشرين الاول الذي بلغ (10 حالة) والتي تمثل (50٪)، في حين أن عدد الاصابات بالجيارديا لامبليا (16 حالة) والتي تمثل (13.3٪)، وكان أعلى معدل للإصابة خلال شهر تشرين الثاني والتي وصلت (5 حالات) الذي يمثل (25٪). بينت الدراسة الكشف عن أن عدم ارتداء القفازات، وغسل اليدين واستخدام التعقيم الفوري لهم بعد تشخيص المريض. وخلصت الدراسة إلى أن معدل انتشار عدوى الطفيليات المعوية التي تسبب الإسهال التي تشمل الاميبا الحالة للنسيج والجيارديا، وحتى البكتريا والفطريات مع قلة النظافة، وكذلك ارتفاع معدل الإصابة كان خلال المواسم الحارة.وأوصت الدراسة أن تعليم التزام العاملين في مجال الصحة بقواعد الصحة العامة والاهتمام بالنظافة الشخصية، وغسل اليدين وارتداء القفازات عند التعامل مع المرضى. مع الفحص الدوري للأمراض الانتقالية، بما في ذلك الاصابة بالطفيليات المعوية. ومن خلال الاستبيان تم التعرف على التأريخ الطبي للاصابة بالاسهال لاربعين شخص من العاملين في المستشفى,وقد بين الاستبيان ان هناك اصابات بالطفيليات المعوية لدى العاملين في الاشهر الستة السابقة للدراسة فكانت نسبة الاصابة بالاميبا الحالة للنسيج(12 حالة) وتكررت لخمسة اشخاص لمرتين .اما الاصابة بالجيارديا فكان ا لعدد (4 حالة)وتكررت الاصابة لشخص واحد فقط .وكا ن لبعضهم اصابات بكتيرية تم تشخيصها في مختبرات المستشفى ولكنها خارج موضوع الدراسة ولذلك لم نوضحها بالتفصيل.

الكلمات المفتاحية: الاميبا الحالة للنسيج، الجيارديا لامبليا, العاملين في الصحة، ارتداء القفازات، غسل اليدين

Abstract

This study was aimed to detection the prevalence of diseases were caused by intestinal protozoa in staff of Al-diwaniyah teaching hospital and maternity and child hospital, and to identify the relationship between the staffs personal hygiene and these diseases. A research was designed from October 2015- March 2016. one hundred twenty stool samples collected from the of health workers in Al- Diwaniyah teaching hospital, and maternity and child

hospital under the rate of (20 samples) for each months of study months.The results were showed that infection with the Entamoeba histolytica was (36 cases) which represent (43.2%), the highest rate of infection was during October which has reached (10 cases) which represent (50%), while the number of infection with the Giardia lamblia was (16 cases) which represent (13.3 %), the highest rate of infection was during November which has reached (5 cases) which represented (25%). The detection has declared that not wearing gloves, washing hands and pasteurizing them after diagnosis of patient . The study concluded that the prevalence of intestinal protozoa infection that cause diarrhea that include Entamoeba histolutica and Giardia lamblia, and the infection association with the poor hygiene and also the high rate of infection was during the warm seasons.The study recommended that educating health workers commitment to the rules of public health and attention to personal hygiene, and wash hands and wear gloves when handling patients. Do periodically screened for transitional diseases, including inflammation of intestinal protozoa. And through a questionnaire to determine the medical history of diarrhea For Forty people working in the hospital, The questionnaire showed there were ifection Intestinal parasites in the six months prior to the study. The proportion of amoeba cases was 12 cases and repeated five times. The number of cases withe Giardia was 4 cases and the infection was repeated to one person only. Some of them had bacterial infections that were diagnosed in hospital laboratories But they are outside the subject of the study and therefore we have not explained them in detail.

Key words Entamoeba histolytica, Giardia lamblia, health workers, wearing gloves, washing hands.

Introduction

Human infections due to intestinal parasites caused by protozoa is among the most prevalent infections in developing and tropical countries causing a significant morbidity and mortality[(1)]. Entamoeba histolytica and Giardia lamblia are estimated to infect about 60 million and 200 million people worldwide, respectively[(2)]. It is generally estimated that at least 2.5 billion of the estimated world's 6.9 billion people are currently infected with intestinal protozoan parasites cutting across all continents and regions of the world[(3)]. A high prevalence of intestinal parasitic infections in human are positively correlated with poverty and poor personal hygiene, lack of safe water supply and contamination of the environment by human excreta and animal wastes[(4)]. In the

world the most common intestinal protozoan parasites are Entamoeba histolytica, Giardia lamblia. The diseases caused by these intestinal protozoan parasites are known as amoebiasis, giardiasis, respectively, and they are associated with diarrhoea[5].

Amebiasis disease is an infection caused by an intestinal protozoa, Entamoeba histolytica, is the third most common cause of death from parasitic diseases([6]). The non-invasive disease is often asymptomatic, but can cause diarrhea or other gastro-intestinal symptoms such as abdominal pain or craps. This non-invasive infections can persist or progress to an invasive disease in which trophozoite penetrate the intestinal mucosa and kill the epithelial cells[7]. Giardia lamblia parasite is another major intestinal protozoa which is flagellated unicellular eukaryotic microorganism found especially in temperate and tropical countries and commonly causes diarrheal disease throughout the world[8].

Diarrhoea is defined as the passage of loose, watery stools (Giardia lamblia), bloody stools (Entamoeba histolytica) occurring more than three times in one day[9]. There were four clinical types of diarrhoeal diseases: acute watery diarrhoea, acute bloody (dysentery), with infection intestinal protozoa([10]).

Material & Methods

Stoole samples collection

1-Setting of the study:

The study is conducted at Al-Diwaniyah teaching hospital and maternity and child hospital.

2- Sample of study:

one hundred twenty samples of feces were collected from the of health workers in Al- Diwaniyah teaching hospital, and maternity and child hospital under the rate of (20 samples) for each months of study months.

3-Stool samples examination:

Stool samples from each health worker were collected in clean fit cover containers and transported laboratory of Al-Diwaniyah teaching hospital under cooling, first examined by naked eyes before microscopically examination for colour, consistency, blood and mucous, then examined microscopically for presence of Entamoeba histolytica and Giardia lamblia by direct method using normal saline and lugholes iodine and under high power (40 x) to detection of trophozoites and cysts of the two parasites.[9] .

Results

The result of (120) specimens were collected from the health worker, who are complaining from frequent bowel motion (diarrhea), in Al-Diwaniyah teaching hospital and maternity and child hospital during the period of (6 months) (from October 2015- March 2016) under the rate of (20 specimen) for each month.

Image (1) Giardia lamblia trophozoite method X^{40}

Image(2)Entamoeba histolytica in direct cyst in direct method X40

Results have showed that infection with the Entamoeba histolutica was (36 cases) which represent (43.2%) from the total specimens number, and for the highest rate of infection was during October which has reached (10 cases) out of (20 specimens) and it has stool for (50%), and as it is shown in table no.(l)

Table (1) : Distribution of infection with Entamoeba histolytica isolated from stool in six months

Month	Number of infections out of 20 specimens	Percentage for infection out of 20
October	10	50%
November	7	35%
December	6	30%
January	3	15%
February	4	20%
March	6	30%
Total	36	43.2%

Study has declared after diagnosis and test that number of infection with Giardia lamblia was (16 cases) which represent (13.3%) , and as for the comparison with infection was during November which represend (25%) of the total number (20 specimens) for each monthe, and the number of infection was (5 cases) as it shown in table no.(2)

Table (2) : Distribution of infection with Giardia lamblia isolated from stool in six months

Month	Number of infections out of 20 specimens	Percentage for infection out of 20
October	4	20%
November	5	25%
December	2	10%
January	1	5%
February	2	10%
March	2	10%
Total	16	13.3%

And through a questionnaire to determine the medical history of diarrhea For Forty people working in the hospital, The questionnaire showed there were ifection Intestinal parasites in the six months prior to the study. The proportion of amoeba cases was 12 cases and repeated five times. The number of cases withe *Giardia* was 4 cases and the infection was repeated to one person only. Some of them had bacterial infections that were diagnosed in hospital laboratories But they are outside the subject of the study and therefore we have not explained them in detail. With

this questionnaire, we completed our work for a year. But in more detail shows age (Their ages ranged from 20 to 48 years), gender(21 male and 19 female) and workplace in the hospital This questionnaire defines their compliance with hygiene instructions (Hand Wash and Wear gloves) This causes the continued infection of intestinal parasites (table no.(3).

Table no.(3) questionnaire and it is content for (40) health workers samples

N.	Age	Gender	Work place	Got diarrhea or dysentery during the years 2015-	Type of Infectious?	Hand Wash?	Wear gloves?
1	48	Male	Parasite Lab.	No	----------	Yes	No
2	30	Female	5th floor	Yes	*E.histolytica*	No	No
3	28	Male	Lab.	Yes, **Twice**	*E.histolytica*	No	Yes
4	23	Female	Parasite Lab.	No	----------	Yes	Yes
5	32	Male	Histological Lab.	' Yes	*E. histolytica*	Yes	No
6	18	Male	Hospital -kitchen	No	----------	Yes	Yes
7	28	Male	Emergency Department	Yes, three times	Bacteria	No	No
S	20	Male	Emergency Department	Yes	*G. lamblia*	No	Yes
9	29	Female	Hemodialysis	No	----------	No	No
10	33	Male	2nd floor	Yes	*E. histolytica*	No	No
11	30	Male	Bacteriology Lab.	No	----------	Yes	Yes
12	33	Male	Hematology Lab.	No	----------	No	No
13	23	Female	4th floor	No	----------	No	No
14	27	Female	Hemodialysis	No	----------	No	Yes
15	37	Male	Histological Lab.	No	----------	Yes	Yes
16	40	Female	4th floor	Yes, Twice	*E. histolytica*	No	No
17	16	Male	Emergency Department	Yes	*G.lamblia*	No	Yes
18	44	Female	3 rd floor	Yes	*E. histolytica*	No	No
19	24	Male	Hospital -kitchen	Yes	*E. histolytica*	No	Yes
20	32	Male	Allergies and asthma Center	No	----------	No	Yes
21	25	Female	2nd floor	Yes	*E. histolytica*	No	No
22	30	Female	5th floor	No	----------	Yes	No
23	41	Male	R.C.U.	No	----------	Yes	Yes
24	38	Male	Hemodialysis	Yes	*G.lamblia*	No	Yes
25	43	Female	C.C.U	No	----------	No	Yes
26	27	Male	5th floor	Yes, Twice	Bacterial	Yes	Yes
27	39	Male	Emergency Department	No	---------- -	No	No

28	38	Female	5th floor	Yes	Bacterial	No	No
29	42	Female	2nd floor	Yes	*E. histolytica*	No	No
30	37	Male	5th floor	No	----------	No	No
31	33	Female	Parasite Lab.	Yes, Twice	*E. histolytica*	No	No
32	44	Male	5th floor	Yes,Twice	Bacterial	No	No
33	47	Female	2nd floor	No	----------	Yes	Yes
34	43	Male	3 rd floor	Yes, Twice	*E. histolytica*	No	No
35	36	Male	2nd floor	No	----------	Yes	Yes
36	40	Female	Allergies and asthma Center	No	----------	Yes	Yes
37	41	Female	5th floor	No	----------	Yes	Yes
38	30	Male	Parasite Lab.	Yes, Twice	*E. histolytica*	No	No
39	45	Male	Parasite Lab.	Yes	*G.lamblia*	No	No
40	39	Female	3 rd floor	Yes, Twice	*G.lamblia*	No	No

Discussion

Given the importance of health of the health workers and the impact of disease on quality of health care provided to their patients was conducted this study to determine the prevalence of the causes of diarrhea among health professionals in Al-Diwaniyah teaching hospital and maternity and child hospital, and to know the causes of this prevalence, and for the development of appropriate solutions to curb this prevalence, which could be due to a lack of awareness of health and non-compliance with the rules of health and hygiene, also the spreading of insect vectors of disease and pollution of the environment.

1.Entamoeba histolytica

Entamoeba histolytica is widespread in the world and also the Arab world, including in Iraq, due to its spreading in tropical and subtropical, and even the cold regions[10]. Its spread in Iraq dates back to the cause of environmental and drinking water pollution, and waste, also the spread of insect vectors of the parasite, and the lack of health awareness and commitment to the rules of public health and personal hygiene[11].

This study showed that the infection percentage of Entamoeba histolytica is (43.2%) during the months of study and is much less than the ratio recoreded by AL-Dujaili (1993)in the city of Karbala which was (3.5%)[12] ,It is also less than the percentage recorded by Muhannad Faraj (1989) in the city of Arbil which was (18.6%), and less than

the percentage has been recorded by Al-Najjar in Al- Nu'mania (1993), where the ratio was (27.3)[13] , and is comparable to the to the percentage recorded by Al-Dulaimi,(2001) in the city of Al- Ramadi, which was (35.66%) [14] The reason for the different infection rates among researchers may be due to the number of samples tested and the methods used for diagnosis and environmental conditions, geography of the region to another.The study showed that there is variation in the infection rate of this parasite in the months of study, where the infection rate increased in the warm months, where the percentage in the October was (50%), while decreased in the winter months, where the percentage in January was (15%), this is consistent with al-Dulaimi (2001) in the city of Ramadi[15] also with al-Dulaimi (1996) in Anbar province[16] .Barry and Harris (1977), reported that the infections are more common in wet weather than dry weather. The reason for the high rate of infection in the spring and summer months because the climate is suitable for the survival of cyst stage ,thus get infection, also due to the increased effectiveness of the population and opportunities for exposure to contaminated sources in addition to the consumption of ice factory from non-sterile water in the hot summer months. While low temperatures affects negatively on the vitality of the cyst which is contagious phase.

2 .Giardia lamblia

It is one of importance parasite because of its spread and cause greasy diarrhea which leads to prevent the absorption of fat. The reason for its spread are the reasons that have been mentioned previously, in addition to the lack of attention to purify drinking water, and the parasite formation

the cyst that resistance environmental conditions. The study showed that the infection percentage of this parasite was (13.3%), which is less than the ratio recorded by Rastigo *el at.* (1999) in India where was the infection percentage of (14.8%) [(17)] ,and is comparable to a large extent the percentage of 13.8 recorded by Boia-Mn *el at* (2000) in Colombia, and greater than the percentage recorded by Faraj in Yemen (1958), where it was (10.2%) [(18)], and less than ratio recorded by Magdi (1986) in Baghdad[(19)] .The reason for the different rates to different circumstances in which the studies were conducted. The study showed that the infection rate was biggest in the warm seasons, where the percentage in November was (25%) and this agrees with AL Mayali **(2000)[(20)].**

3- Questionnaire

The questionnaire showed the ages, workplaces. and prevalence of gastroprotozoa infection (Entamoeba histolytica,and Giardia lamblia) as well as re-infection of some people, However, the questionnaire showed a lack of compliance with health instructions and hygiene of health workers, who are most exposed to infection due to direct contact with patients.

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