

Prevalence of Amebiasis among Histologically Confirmed Colitis Patients

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ABSTRACT

AIM: Amebiasis is a prevalent infection worldwide and is associated with colitis that may mimic different types of colitis. The aim of this study is to determine the prevalence of amebiasis among patients with endoscopically and histologically confirmed colitis in the Egyptian community.

PATIENTS AND METHODS: This study was carried out in the period from June 2017 to March 2018. Patients in the final analysis were divided into 2 groups according to their histopathologic fea-

tures: Group I: Inflammatory bowel disease (IBD) patients comprised 60, 49 patients diagnosed as ulcerative colitis (UC) and 11 patients diagnosed as Crohn's disease (CD). Group II: Non-specific colitis. Comprised a total of 100 patients.

RESULTS: The prevalence of *Entamoeba histolytica* cysts and trophozoites among the study patients was 9.37% (15/160). They were 11 patients with IBD (6.87%) and 4 patients with non-specific colitis (2.5%). Patients with non-specific colitis are younger in age, had less blood levels of CRP and lower prevalence rates of amebiasis when compared with IBD patients. When patients with IBD were compared as ulcerative colitis and Crohn's disease it seem that the younger age CD did not show different prevalence rates of amebiasis when compared with UC (P value 1).

CONCLUSIONS: The prevalence of amebiasis in histologically confirmed colitis is 9.37% (15/160). They were 11 patients with IBD (6.87%) and 4 patients with non-specific colitis (2.5%). Regarding IBD the prevalence of amebiasis was 11 patients/out of 60 (18.3%) and prevalence was higher in ulcerative colitis when compared with Crohn's disease with figure of 9 patients (15%) and 2 patients (3.3%) respectively. Further studies are needed to clarify the impact of amebiasis on the course of IBD and non-specific colitis.

Key words: Amebiasis; Inflammatory bowel disease; Non-specific colitis

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INTRODUCTION

Amebiasis is a highly prevalent disease. It is assumed that it affects around 50 million people (10% of the world's population) and kills more than 100,000 people annually^[1]. Certain regions around the world had higher prevalence rates including India, Africa, Mexico, and parts of Central and South America. Some areas with higher

prevalence may have amebic infection as high as 50%^[2].

Amebic colonic affection had diverse manifestations ranging from watery diarrhea, dysentery, abdominal pain and tenderness^[3]. These diverse clinical manifestations frequently lead to confusing it with other types of colitis^[4]. Sometimes is difficult to differentiate between amebiasis and idiopathic inflammatory bowel disease (IBD) even with the available sophisticated investigative procedures^[5]. Of notice the rising incidence IBD and the use of immunosuppressants for IBD could precipitate fulminant disease or dissemination of infection in individuals with amebiasis which is higher in IBD patients^[6].

The aim of the current study was to investigate the prevalence of amebiasis among patients with histologically confirmed colitis in our Egyptian community.

PATIENTS AND METHODS

This multicenter study was carried out in the period from June 2017 to March 2018. Patients were picked up from the outpatient clinics and they referred for completing their work up. Patients in the final analysis were divided into 2 groups according to their histopathologic features:

Group I: Inflammatory bowel disease (IBD) patients. IBDs were diagnosed in 60 patients by clinical presentation, laboratory and serological, endoscopic and histopathology examinations. There were 49 patients diagnosed as ulcerative colitis (UC) and 11 patients diagnosed as Crohn’s disease (CD).

Group II: Non-specific colitis. Comprised a total of 100 patients. They were diagnosed by clinical presentation, endoscopic and histopathology examinations as well.

All patients were subjected to: (1) Through history taking; (2) Complete clinical examination; (3) Fresh stool analysis: If native microscopy was found *Entamoeba histolytica* cysts or trophozoites, immunochromatographic rapid assay “RIDA®QUICK *Entamoeba* test” is used to confirm diagnosis. Fresh faeces samples taken from people were examined immediately using the wet mount, Lugol’s iodine and physiological solution^[7]. Serial samples were collected before the sample was considered negative.

Method

(1) A drop of saline was placed at each end of the slide; (2) An applicator stick was used to select a piece of fecal material at the size of a small pea and emulsification of the feces was done in the two drops of saline on the slide then a drop of Lugol’s iodine was added to the right-hand suspension; (3) A cover slip was placed on each suspension, and the slide was examined using the 10× and 40× objectives; (4) Blood examination including: CBC, ESR, CRP; (5) Pan-colonoscopy with multiple biopsies taken for histopathology; (6) Histopathologic examination of the endoscopy retrieved mucosal biopsies; (7) All patients with IBD and amebiasis were treated and followed up according to the current guidelines.

Statistical analysis of the data

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). The Kolmogorov-Smirnov test was used to verify the normality of distribution. Comparisons between groups for categorical variables were assessed using Chi-square or Fisher test. Student *t*-test was used to compare two groups for normally distributed quantitative variables. Significance of the obtained results was judged at the 5% level.

RESULTS

The prevalence of *Entamoeba histolytica* cysts and trophozoites among the study patients was 9.37% (15/160). They were 11 patients with IBD (6.87%) and 4 patients with non-specific colitis (2.5%). Table 1 shows the major differences between the two study groups. Patients with non-specific colitis are younger in age, had less blood levels of CRP and lower prevalence rates of amebiasis when compared with IBD patients.

When patients with IBD were compared as ulcerative colitis and Crohn’s disease it seem that the younger age CD did not show different prevalence rates of amebiasis when compared with UC as shown in Table 2.

DISCUSSION

Both amebiasis and colitis are prevalent diseases and frequently encountered in the daily medical practice not only in gastroenterology clinics but also in GP and family medicine clinics particularly in developing countries like our community.

In fact the relation between amebiasis and IBD has been illustrated in the literature with sometimes conflicts. One study by Ustun *et al*^[8], studied the prevalence of amebiasis among IBD patients in Turkey and they found ameba cyts and trophozoites among 14 (8.75%) of a total of 160 cases, 13 (10.0%) of the 130 patients with ulcerative colitis and 1 (3.3%) of the 30 patients with Crohn’s disease. When these figures compared with our results of 11 patients/out of 60 IBD cases (18.3%) including 9 patients out of 49 with UC (18.4%) and 2 patients out of 11 with CD (18.2%) it seems that our prevalence

Table 1 Comparison between the two studied groups according to different parameters.

	Non-specific (n = 100)	IBD (n = 60)	P
Age (years)	39.9 ± 9	44.7 ± 7.8	0.001*
Sex			
Male	90 (90%)	57(95%)	0.374
Female	10 (10%)	3(5%)	
E. histolytic in the stool			
Negative	96 (96%)	49 (81.7%)	0.003*
Positive	4 (4%)	11 (18.3%)	
CRP			
Negative	93 (93%)	46 (76.7%)	0.003*
Positive	7 (7%)	14 (23.3%)	

* Significance.

Table 2 Relation between endoscopic evidence and different parameters in IBD group (n = 60).

IBD group	Endoscopic evidence		P
	UC (n = 49)	CD (n = 11)	
Age (years)	45.9 ± 7.7	39.4 ± 6.2	0.011*
Sex			
Male	47 (95.9%)	10 (90.9%)	0.462
Female	2 (4.1%)	1 (9.1%)	
E. histolytic in the stool			
Negative	40 (81.6%)	9 (81.8%)	1
Positive	9 (18.4%)	2 (18.2%)	
CRP			
Negative	37 (75.5%)	9 (81.8%)	1
Positive	12 (24.5%)	2 (18.2%)	

* Significance.

rates are higher and this can be explained by 2 points. First, the small number of patients in our IBD group (60 patients versus 130 in their study). Second, our Egyptian community is a subtropical community and may be less developed than Turkey and prevalence of amebiasis may be higher in Egypt than in Turkey.

Another study from Bosnia^[9] found that *Entamoeba histolytica*/dispar were found in 19 (16.0%) of a total of 119 cases with IBD, 12 (14.3%) of the 84 patients with ulcerative colitis and 7 (20.0%) of the 35 patients with Crohn's disease. Although the prevalence rates reported in this study regarding all IBD and UC patients were similar to our figures yet the prevalence rates they reported for CD is high (20%) when compared to us (18.2%) and this ultimately is a result for low prevalence rated of Crohn's disease in Egypt and this represented in the current study by the small number of CD patients we enrolled. Another point is that CD commonly affects the small bowel and the natural habitat of amebiasis is the colon making it more logic to be associated with lesions affecting the colon rather than the small bowel.

However, the relations between amebiasis and IBD in the literature were not limited to the prevalence studies. A more offensive relation have been reported by Addib *et al*^[5], they reported invasive amebiasis flaring a stable UC patient on aminosylates after her return from developing country and the patient condition improved only after she received her anti-amebic drugs. The relation also extends to the confusion that may occur in the diagnosis because both conditions have some similarities in the endoscopic and histopathologic features and are considered as differential diagnosis to each other^[6].

Another important and even conflicting relation between amebiasis and UC has been reported from one of our institutions. In the study by Saad *et al*^[10], they found deleterious impact for the treatment of intestinal parasites (including *Ascaris lumbricoides* *Blastocystis hominis*, *Entamoeba histolytica*, *Giardia lamblia*, *Hymenolepis nana*, *Trichostrongylus*, *Trichuris trichura*, *Enterobius vermicularis*) on the course of UC. In their study patients who received specific treatment for their parasitic infestations (including amebiasis) showed deterioration in their clinical, laboratory and colonoscopic features when compared with UC patients who were not treated for their parasitic infestations. The authors attributed this to the protective role of parasites on the course of UC probably through an immune mechanism.

To the best of our knowledge no study in the literature focused prevalence of amebiasis among histologically confirmed colitis. Making this article unique in that point and to shade the light on the possible relation between amebiasis and non-specific colitis. It is known that amebiasis is associated with production of multiple ulcers in the caecum or recto-sigmoid regions and the term non-specific colitis is a transitional stage in the course of colitis. This is supported by the findings in the current study. Non-specific colitis patients in this study are of younger age, had low CRP levels and low prevalence rates of amebiasis when compared with IBD patients. Based on the evidence proposed by Saad *et al*^[10], in 2013, treatment of amebiasis (with assumed protective role in IBD) may convert non-specific colitis to active IBD. We cannot confirm this but we think that this point needs further prospective studies to delineate the

relation between amebiasis and non-specific colitis.

The current study had some limitations. First, the small number of patients in IBD group. Second, lack of follow up regarding the impact of amebiasis on the course of histologically confirmed colitis with and without treatment for amebiasis. But our aim was primarily to focus on the prevalence and this could be a research question for further studies.

In conclusion, the prevalence of amebiasis in histologically confirmed colitis is 9.37% (15/160). They were 11 patients with IBD (6.87%) and 4 patients with non-specific colitis (2.5%). Regarding IBD the prevalence of amebiasis was 11 patients/out of 60 (18.3%) and prevalence was higher in ulcerative colitis when compared with Crohn's disease with figures of 9 patients (18.4%) and 2 patients (18.2%) respectively. Further studies are needed to clarify the impact of amebiasis on the course of IBD and non-specific colitis.

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