

Prevalence of Colonic Diverticulosis in Irritable Bowel Syndrome Patients Compared to Other Patients in Rajavithi Hospital

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ABSTRACT

Background: Irritable bowel syndrome (IBS) is a chronic gastrointestinal disorder. Patients may suffer from abdominal discomfort, bloating or pain associated with disturbed defecation. The etiology has not been clear. Colonic diverticula are mucosal outpouchings through the large bowel. Recent study demonstrated more prevalence of diverticulosis in IBS.

Aim: To determine the prevalence of diverticulosis in IBS patients and the association between diverticulosis and IBS patients.

Method: We enrolled 150 patients in IBS group (75 patients) and control group (75 patients). IBS was defined by Rome III criteria. Medical history, physical examination and colonoscopy was done.

Results: The IBS group consisted of 29 males and 46 females with a mean age of 54 years. The characteristics of abdominal pain in IBS were described as fullness and bloating in 96%. The frequencies of symptom occurring per month were 36% had 3-7 days, 62.7% had 8-14 days, and 1.3% had 8-14 days. Comparison of the IBS and control groups, there was no significant difference in age, gender and BMI between IBS group and control group ($p > 0.05$). The prevalence of colonic diverticulum of IBS group was 24.0% and control group was 10.7%. There was statistically significant difference in prevalence between both groups (p value = 0.031). Comparison of location of diverticulum, right sided colon and cecum diverticula were mostly found in IBS group and in control group were found in rectosigmoid and along colon colon. There was no significant difference in location of diverticulum between both groups (p value = 0.149). There was no significant difference in numbers of diverticula between both groups (p value = 0.095).

Conclusions: Prevalence of diverticulosis in IBS group was more than in control group and these diseases may be similar in pathogenesis that should be studied more extensively especially in elderly patients.

Key words : Irritable bowel syndrome, Colonic diverticulosis

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BACKGROUND

Irritable bowel syndrome (IBS) is a chronic gastrointestinal disorder. Patients may suffer from abdominal discomfort, bloating or pain associated with disturbed defecation. Disease progression is off and on, upsetting the quality of life of the patients. IBS is a common condition, with prevalence estimates ranging between 12-15% the western countries.^(1,2) Danvivat D, *et al.* reported the prevalence of IBS in Thai population to be approximately 4.8 percent.⁽³⁾ The diagnosis of IBS can be made based on the Rome III criteria set up by the Rome Foundation.⁽⁴⁾

Colonic diverticulosis are mucosal outpouchings through the large bowel. Recent study has demonstrated that the prevalence of colonic diverticulosis increases with age, being 5% at age 40, 30% at age 60, and 85% at age 80. Westernized nations have the greater prevalence rates. There are limited data about the prevalence rate of colonic diverticulosis in Asia. Rajendra *et al.* reported that the prevalence rate of colonic diverticulosis in Asia population was 10% and the right-sided location was predominant (80%).⁽⁷⁾ In addition, the study of Otte *et al.* demonstrated that 19 of 69 IBS patients had colonic diverticulosis. There is a trend toward increasing prevalence of colonic diverticulosis in IBS patients more than those of the general population. Several studies demonstrated that colonic diverticulosis may heighten abnormal intestinal motility, abdominal discomfort and IBS-associated constipation.^(5,6)

In Thailand, there are no studies on the prevalence of colonic diverticulosis in IBS patients, or on the prevalence of colonic diverticulosis in the general population. The purpose of this study was to demonstrate the prevalence of colonic diverticulosis in IBS patients compare to the prevalence of colonic diverticulosis in Thai population. Results from this study could be helpful in the management of colonic diverticulosis and of IBS patients.

PATIENTS AND METHODS

This cross-sectional prospective study was conducted at the Division of Gastroenterology, Rajavithi Hospital, Bangkok, between December 2007 and January 2009. IBS patients, as defined by Rome III criteria, were recruited. Seventy-five patients were enrolled in the IBS group and the 75 patients in the control group. Inclusion criteria included IBS patients and

healthy controls aged 18 and over who were performed colonoscopies for various indications. Exclusion criteria included patients with history of colon cancer and patients with contraindication for colonoscopy. Medical history and physical examination were obtained and colonoscopy was performed by GI fellows and GI staff of the Division. The study was reviewed and approved by the ethics review committee of Rajavithi Hospital.

Statistical analysis

Results are expressed as the mean and SD for continuous variables (e.g. age) and as number (percentage) for categorical data (e.g. gender). The Pearson chi-square test was also used for comparison. A *p*-value < 0.05 was considered statistically significant. All *p*-values were two-sided. Statistical interpretation of data was performed by using the computerized software program.

RESULTS

The IBS group (75 patients) consisted of 29 males and 46 females, with a mean $\pm$ SD age of 54.07 ± 13.03 years. The IBS group was classified into subgroups as shown in Figure 1.

In the IBS group, the characteristics of abdominal pain were described as fullness and bloating in 96% (72 of 75). The frequencies of symptom occurring per month were as follow: 36% (27 of 75) having symptoms 3-7 days per month, 62.7% (47 of 75) having symptoms 8-14 days per month, and 1.3% (1 of 75) experiencing 8-14 days per month. The duration of symptom were as follow: 36% (27 of 75) having symp-

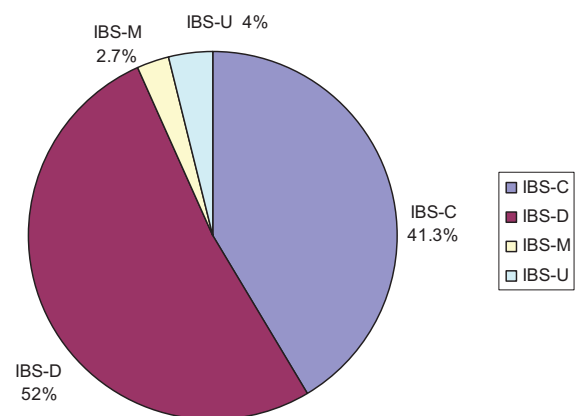


Figure 1. Subtypes of IBS : IBS-C = IBS constipation type, IBS-D = IBS diarrheal type IBS-M = IBS mixed type and IBS-U = IBS unsubtype.

toms for 3-6 months, 57.3% (43 of 75) having symptoms for 6-9 months, 2.7% (2 of 75) having symptoms for 9-12 months and 4% (3 of 75) having symptoms for more than 12 months. The different consistencies of stool were shown in Figure 2.

Comparison of the IBS group and the control group

Demographic data of the IBS group and the control group were shown in Table 1.

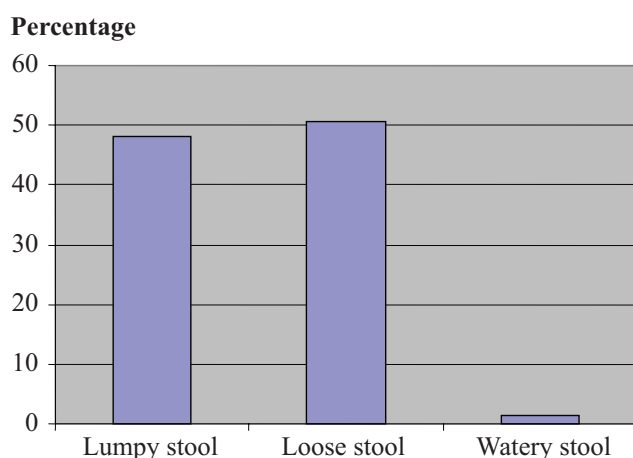


Figure 2. Percentages of characteristics of stool.

There was no significant difference in age, gender and BMI between the IBS group and the control group ($p > 0.05$). The prevalence of colonic diverticulosis, the location of diverticuli and the number of diverticuli in the IBS group and in the control group were shown in Tables 2, 3 and 4.

The prevalence of colonic diverticulosis in the IBS group was 24.0% (18 of 75) and in the control group 10.7% (8 of 75). There was statistically significant difference in the prevalence between the two groups ($p = 0.031$). The total prevalence of colonic diverticulosis in this study was 17.3% (26 of 150).

Comparing the location of diverticuli in the two groups, it was found that right-sided colon and cecal diverticuli were mostly found in the IBS group (9 patients), while in the control group, diverticuli were found in the recto-sigmoid (3 patients) and along the entire colon (3 patients). There were 2 patients with right-sided colon and cecal diverticuli in the control group. There was no significant difference in the location of diverticuli in the two groups ($p = 0.149$).

As for the number of diverticuli per case, about 1-5 diverticuli were usually noted in both groups (14 in the IBS group and 4 in the control group). There was no significant difference in the number of

Table 1. Demographic characteristics of the IBS group and the control group.

Parameters	IBS group	Control group	<i>p</i> -value
Age (mean $\pm$ SD) yrs.	50.07 $\pm$ 13.03	60.48 $\pm$ 12.09	0.27
Gender (M/ F)	29/46	35/40	0.32
BMI (mean $\pm$ SD) kg/m ²	23.98 $\pm$ 4.7	23.48 $\pm$ 4.15	0.26

Table 2. The prevalence of colonic diverticulosis in the IBS group and the control group.

Diverticulosis	Found (n)	Not found (n)	Total	<i>p</i> -value
IBS	18	57	75	0.031
Control	8	67	75	
Total	26	124	150	

Table 3. Comparison of the location of colonic diverticulosis in the IBS group and the control group.

Location of diverticuli	Recto-sigmoid	Left-sided	Right-sided and cecum	entire colon	<i>p</i> -value
IBS	5	1	9	3	0.149
Control	3	0	2	3	
Total	8	1	11	6	

Table 4. Comparison of the numbers of colonic diverticuli in the IBS group and the control group.

Numbers of diverticuli	1-5	6-10	>10	p-value
IBS	14	1	3	0.095
Control	4	1	3	
Total	18	2	6	

diverticuli in the two groups ($p = 0.095$).

DISCUSSION

Diverticular disease encompasses diverticulosis and diverticulitis. Diverticular disease is more common in elderly patients. The prevalence in Western countries is much higher than in Eastern countries⁽⁷⁾. In Eastern countries, the prevalence rates also show ethnic differences.⁽⁷⁾ Rajendra, *et al.* reported that the prevalence of diverticular disease in multiracial Asian population was approximately 10%. The highest prevalence was in Chinese population at about 15%. In this study, the prevalence of diverticulosis in the control group was 10.7%. Interestingly, we also found that the location of diverticuli in both groups was mainly right-sided colon and cecal (11 of 26) rather than left sided colon (1 of 26). This was similar to previous studies.^(7,11,12)

IBS is frequently encountered in general practice with increasing prevalence. Diagnosis is significantly based on history taking. The pathogenesis of IBS is multifactorial. An association between IBS and diverticular disease has been postulated on account of the mechanism and the pathogenesis of the diseases. A recent study has found that there is uncoordinated colonic activity colonic segmentation or inhibitory control of abnormal neuromuscular function⁽¹⁰⁾. Another previous study demonstrated that there was a greater prevalence of diverticulosis in IBS patients, but no comparative study was made⁽⁸⁾. In our present study, the prevalence of diverticulosis in the IBS group was higher than in the control group with statistically significant difference ($p = 0.031$), but no differences being noted with regard to the location and the numbers of diverticuli.

In conclusion, the prevalence of diverticulosis in the IBS group was higher than in the control group,

extensively especially in elderly patients. The pathogenesis of IBS and colonic diverticulosis may share a similar pathway, and this aspect should be further studied.

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