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

Rungjiratananon S
Sirinthornpunya S

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

Division of Gastroenterology, Rajavithi Hospital, Bangkok, Thailand.

Address for Correspondence: Siam Sirinthornpunya, M.D., Division of Gastroenterology, Rajavithi Hospital, Bangkok, Thailand.
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 \(\pm\) 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-

![Image](image-url)
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.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>IBS group</th>
<th>Control group</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean ± SD) yrs.</td>
<td>50.07 ± 13.03</td>
<td>60.48 ± 12.09</td>
<td>0.27</td>
</tr>
<tr>
<td>Gender (M/ F)</td>
<td>29/46</td>
<td>35/40</td>
<td>0.32</td>
</tr>
<tr>
<td>BMI (mean ± SD) kg/m²</td>
<td>23.98 ± 4.7</td>
<td>23.48 ± 4.15</td>
<td>0.26</td>
</tr>
</tbody>
</table>

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 diverticuli per patient between the two groups (p = 0.194).

<table>
<thead>
<tr>
<th>Diverticulosis</th>
<th>Found (n)</th>
<th>Not found (n)</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS</td>
<td>18</td>
<td>57</td>
<td>75</td>
<td>0.031</td>
</tr>
<tr>
<td>Control</td>
<td>8</td>
<td>67</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>124</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location of diverticuli</th>
<th>Recto-sigmoid</th>
<th>Left-sided</th>
<th>Right-sided and cecum</th>
<th>entire colon</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS</td>
<td>5</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>0.149</td>
</tr>
<tr>
<td>Control</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>1</td>
<td>11</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
dивертикули в двух группах (p = 0.095).

**DISCUSSION**

Дивертикулярная болезнь включает дивертикулоз и дивертикулит. Дивертикулярная болезнь более распространена у пожилых пациентов. Восточные страны имеют гораздо большую распространенность болезни по сравнению с западными странами (7). В Восточной Азии также обнаружены этнические различия (7). Rajendra et al. (7) отмечали, что частота дивертикулярной болезни в многоэтнической азиатской популяции составляет примерно 10%. В нашем исследовании частота дивертикулоза в контрольной группе составила 10.7%. Интересно, мы также обнаружили, что расположение дивертикули в обеих группах было преимущественно правосторонним кишечником и десцессальным (11 из 26) вместо левостороннего кишечника (1 из 26). Это было схожим с предыдущими исследованиями (7,11,12).

IBS часто встречается в общей практике с увеличением частоты. Диагностика основана на истории болезни. Патогенез IBS является многофакторным. Связь между IBS и дивертикулярной болезнью была установлена на основании механизма и патогенеза заболеваний. recent study found that there is uncoordinated colonic activity, colonic segmentation, or inhibitory control of abnormal neuromuscular function (10). Yet, previous study demonstrated that there was a greater prevalence of diverticular disease in IBS patients, but no comparative study was made (8). In our present study, the prevalence of diverticulosis in 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.

**REFERENCES**