Analysis of the Gastrointestinal Symptoms of Uninvestigated Dyspepsia and Irritable Bowel Syndrome

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Background/Aims: Epidemiological studies suggest that there is a considerable overlap between functional dyspepsia (FD) and irritable bowel syndrome (IBS). The aim of this study was to examine concurrent gastrointestinal symptoms in FD and IBS.

Methods: A total of 186 college students filled out a questionnaire regarding whether they had uninvestigated dyspepsia (UD, FD without endoscopic examination) and IBS based on Rome-II criteria. Gastrointestinal symptoms were measured using the Gastrointestinal Symptom Rating Scale (GSRS) questionnaire.

Results: A total of 181 students (98 males, mean age 24.6 years) completed both questionnaires. The prevalence of UD, IBS, and UD+IBS overlap was 12 (6.7%), 40 (22.1%), and 8 (4.4%), respectively. A significant UD+IBS overlap was observed (66.7% IBS in UD, 20.0% UD in IBS). Reflux scores of GSRS in either UD or IBS were significantly greater than in those without. Gastroesophageal reflux disease (GERD), defined as weekly occurring moderate symptoms of heartburn and/or acid regurgitation and evaluated using the GSRS, was found in 16 (8.8%) of the subjects. The prevalence of IBS was significantly higher in GERD patients than in non-GERD patients (50.0% vs 19.4%).

Conclusions: The considerable overlap not only between UD and IBS, but also between GERD and IBS, suggests the involvement of common pathophysiological disturbances in the two conditions. (Gut and Liver 2009;3:192-196)

Key Words: Dyspepsia; Irritable bowel syndrome; Gastroesophageal reflux; Overlap; Gastrointestinal symptom rating scale

INTRODUCTION

Functional dyspepsia (FD) and irritable bowel syndrome (IBS) are two major functional gastrointestinal (GI) disorders. Both conditions are determined by heterogeneous factors, and FD and IBS are regarded as separate entities with unknown etiology; however, several common pathophysiological disturbances in FD and IBS have recently been identified, such as visceral hypersensitivity, and indeed FD coexists in one- to two-thirds of IBS subjects. Based on such common disturbances, a few recent review articles suggested that FD and IBS represent different manifestations of a single entity. Surveys of concurrent upper and lower GI symptoms are useful to support this idea; however, the overlap of FD and IBS has not been examined in Japan.

The aim of this study was to examine GI symptoms in FD and IBS. We conducted a survey of FD and IBS in our medical students after a lecture on these diagnoses. The severity of various GI symptoms was assessed using the GI Symptom Rating Scale (GSRS), which is a validated, self-administered questionnaire.

MATERIALS AND METHODS

1. Subjects

One hundred eighty-six consecutive 5th-year medical students in our college (100 males, 24.5±3.0 years old) were recruited between June 2005 and December 2007. This survey was conducted when small groups of 5 or 6 students entered our Division of Gastroenterology for clinical training.
Table 1. Demographics of Students Who Completed the Survey (n=181) and Prevalence of UD, IBS, and UD+IBS

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Male:Female (%)</th>
<th>Age (years [SD], range)</th>
<th>H. pylori infection (%)</th>
<th>NSAID user (%)</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>98:83 (54:46)</td>
<td>24.6±3.1 (21-43)</td>
<td>15/181 (8.3)</td>
<td>5/181 (2.8)*</td>
<td></td>
</tr>
</tbody>
</table>

The presence of gastroesophageal reflux disease (GERD) was assessed by GSRS. GERD was considered when the either heartburn score or acid regurgitation score was 4 or greater. This condition indicates moderate symptoms of heartburn and/or acid regurgitation occurring at least once per week, which corresponded to the Montreal definition for the diagnosis of GERD in population-based studies.8

3. Our questionnaire

After the GSRS questionnaire, a small group was given an intensive lecture on FD and IBS diagnoses for half an hour. These diagnoses were based on Rome II criteria. In brief, FD was defined as follows: at least 12 weeks within the preceding 12 months of dyspepsia defined as pain or discomfort centered in the upper abdomen; no evidence of organic disease likely to explain the symptoms; and no evidence that dyspepsia is exclusively relieved by defecation or associated with the onset of a change in stool frequency or stool form.11 FD was subdivided into symptom subgroups, ulcer-like (pain-predominant), dysmotility-like (unpleasant or irritating non-painful sensation-predominant) and unspecified (no symptoms of the above) dyspepsia. IBS was defined as follows: at least 12 weeks in the preceding 12 months of abdominal discomfort or pain with two of three features: relieved with defecation; and/or onset associated with a change in stool frequency; and/or onset associated with a change in stool formation.12 IBS was also subdivided into symptom subgroups, diarrhea-predominant and constipation-predominant IBS.

Subsequently, students filled out our questionnaire about whether they had uninvestigated dyspepsia (UD, defined as FD without endoscopic investigation) and IBS anonymously. The questionnaire also included age, gender and the use of nonsteroidal anti-inflammatory drugs (NSAIDs). NSAID users were defined as subjects who had taken NSAIDs on at least 3 days over the previous week.

Exclusion criteria from this study were that students did not complete both GSRS and our questionnaires.

3. Statistics

The results are reported as the mean±standard deviation. Fisher’s exact probability test and the Wilcoxon test were performed using JMP software (SAS Institute Inc., Cary, NC, USA). p<0.05 was considered significant.

RESULTS

1. Prevalence

One hundred eighty-one of 186 students completed both questionnaires (97.3% response rate). Five students were excluded due to incomplete responses to our questionnaire. Subject characteristics are summarized in Table 1. This survey revealed that 12 (6.7%) and 40 (22.1%) of 181 subjects had UD and IBS, respectively. H. pylori infection was recognized in 15 subjects (8.3%).

UD coexisted with IBS in 8 (4.4%) subjects. In 12 UD subjects, IBS was significantly prevalent than in non-UD