Evaluation of upper abdominal symptoms using the Frequency Scale for the Symptoms of Gastroesophageal Reflux Disease in patients with laryngopharyngeal reflux symptoms

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Background. The purpose of the study was to evaluate upper abdominal symptoms in laryngopharyngeal reflux (LPR) patients and changes in both upper abdominal and LPR symptoms before and after acid-suppression therapy. Methods. In 100 patients with LPR symptoms, upper abdominal and LPR symptoms were evaluated by using the Frequency Scale for the Symptoms of Gastroesophageal Reflux Disease (FSSG) and the LPR symptom scoring system, respectively. In the 52 assessable patients, changes in these symptoms before and after acid-suppression therapy were evaluated. Results. Upper abdominal symptoms were reported by 96/100 LPR patients: 89 responded positively to at least one of the questions about acid reflux-related symptoms and 89 to at least one of those about dysmotility-like symptoms. There was poor correlation between positive rates to FSSG upper abdominal symptom questions and the frequency of reported laryngopharyngeal symptoms. There were significant reductions in the frequency of acid reflux-related symptoms, dysmotility-like symptoms, and laryngopharyngeal symptoms after acid-suppression therapy. The LPR symptom score decreased to less than half the pretreatment score in 25 subjects (therapeutic response group). The pretreatment frequency of dysmotility-like symptoms seemed to be higher in the nonresponse group than in the response group, although the difference was not significant. There was no significant difference between the two groups in the pretreatment frequency of acid reflux-related symptoms. Conclusions. The majority of these Japanese LPR patients experienced some form of upper abdominal symptoms. The frequency of dysmotility-like symptoms was similar to that of acid reflux-related symptoms. The pretreatment frequency of dysmotility-like symptoms, but not of acid reflux-related symptoms, might be a predictor of patient response to acid-suppression therapy.

Key words: acid suppression therapy, gastroesophageal reflux disease, laryngopharyngeal reflux, upper abdominal symptoms

Introduction

Laryngopharyngeal reflux (LPR) is the retrograde flow of gastric contents up the esophagus to the larynx and hypopharynx. It has been reported in up to 10% of patients presenting to an otolaryngologist,¹ and more than 50% of patients with hoarseness have been found to have reflux-related disease.² LPR has also been reported to be a major cause of laryngeal inflammation, and it presents with a constellation of symptoms that differ from those of classic gastroesophageal reflux disease (GERD).³ Koufman¹ was the first to clearly distinguish LPR from GERD, noting that patients with LPR rarely complain of typical GERD symptoms, such as heartburn and acid reflux. There has been, however, no detailed study of upper abdominal symptoms in Japanese LPR patients, so we conducted a prospective study of patients complaining of LPR symptoms.

Acid-suppression therapy with proton-pump inhibitors (PPIs) is considered the mainstay of treatment for LPR,³ but the response to therapy of patients with LPR, unlike that of those with GERD, can be unpredictable.⁴ Therefore, we also evaluated the changes in both upper abdominal and LPR symptoms before and after PPI treatment to determine whether a pretreatment questionnaire using the Frequency Scale for the Symptoms of GERD (FSSG) could predict the therapeutic effect on LPR symptoms. FSSG is a new method of assessing GERD and covers the 12 most common symptoms of GERD.⁵

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Patients and methods

The subjects were 100 patients who presented at the Department of Otolaryngology at the Hokkaido University Hospital between April 2006 and November 2007 complaining of LPR symptoms for more than a month and who were not on acid-suppression therapy. The LPR symptoms were evaluated with a symptom score sheet based on the Reflux Symptom Index proposed by Belafsky,\(^6\) as described in our previous report\(^7,8\) (Table 1). Endoscopic examination of the larynx and hypopharynx was performed using an electronic laryngoscope (VISERA ENF type VT; Olympus, Tokyo, Japan). Laryngoscopic LPR findings consisted of infra-glottic edema with pseudosulcus formation, laryngeal edema, posterior commissure hypertrophy, granulation, thick endolaryngeal mucous, and redness of the intra-arytenoid region, as described previously.\(^7\) Patients with diseases other than chronic laryngeal inflammation and LPR findings were excluded from the study. Although upper gastrointestinal endoscopy was not required for inclusion into this study, this examination using an Olympus GIF-Q240Z or Fujinon EG450ZW5 (Tokyo, Japan) was performed in 43 patients, and the results were evaluated by using the Los Angeles classification.\(^9\)

The patients’ upper abdominal symptoms were evaluated using the 12-question FSSG developed by Kusano et al.\(^5\) (Table 2). Patients were asked to score each question as never = 0; occasionally = 1; sometimes = 2; often = 3; or always = 4. In the FSSG, there are six acid-reflux-related symptoms (questions 1, 4, 6, 9, 10, and 12), five dysmotility-like symptoms (questions 2, 3, 5, 8, and 11),\(^10\) and one laryngopharyngeal symptom (question 7). Pearson’s correlation analysis was used to calculate correlation coefficients between the frequency of each upper abdominal symptom and the frequency of laryngopharyngeal symptoms (StatView version 5.0; SAS Institute, Tokyo, Japan).

Acid-suppression therapy was rabeprazole 20 mg/day for at least 4 weeks. Upper abdominal symptoms, as well as LPR symptoms, were evaluated in 52 assessable patients. The LPR symptoms were judged to have improved if the LPR symptom score decreased to less than half its pretreatment value.\(^7,8\) Double-sided paired and unpaired \(t\) tests were used to determine significant differences in symptom frequency between before and after therapy and in the pretreatment frequency between the therapeutic response and nonresponse groups, respectively.

Results

The mean age of the 100 subjects (46 men, 54 women) was 53.6 years (range, 21–78; median, 57). The FSSG