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Clinical, manometrical and psychological characteristics in patients with functional heartburn overlapping with gastroesophageal reflux disease

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INTRODUCTION

Functional heartburn (FH) is a complex disorder with poor response to proton pump inhibitors (PPIs) and it is crucial to distinguish FH from gastroesophageal reflux disease (GERD). However, some patients may have overlap between FH and GERD as defined by the updated Rome IV criteria and have been rarely investigated.

Therefore, we aimed to investigate the clinical, manometrical and psychological characteristics in patients with FH overlapping with GERD (overlap FH).

METHOD

From November 2014 to December 2019, consecutive patients who had proven GERD but refractory symptoms despite of PPIs use ≥ 8 weeks were prospectively enrolled at a tertiary center. All patients received validated questionnaires, including Reflux Disease Questionnaire (RDQ), Patient Assessment of Gastrointestinal Symptom Severity Index (PAGI-SYM), Brief Symptom Rating Scale (BSRS-5), and Pittsburgh Sleep Quality Index (PSQI). All patients underwent high-resolution impedance manometry (HRIM), and ambulatory multichannel intraluminal impedance-pH testing (MII-pH) tested on PPI therapy. Esophageal motility was evaluated based on the Chicago Classification v3.0 and GERD was further categorized according to the Rome IV criteria. Age- and sex- matched healthy volunteers were also enrolled for comparison of esophageal motility.

RESULTS

A total of 54 patients with refractory GERD symptoms were identified. Thirty-three patients (61%) were diagnosed as overlap FH while the other 21 patients with refractory symptoms were found to have residual acid reflux (n=3), weakly acid reflux (n=13), and reflux hypersensitivity (n=5). The clinical characteristics, symptom profiles and HRIM parameters were similar between the overlap FH and the other refractory GERD patients. Compared with the healthy volunteers, patients with overlap FH had lower distal contractile integral values, larger peristaltic break size and more hiatal hernia. Among the patients with overlap FH, 12 (36.4%) had psychiatric comorbidity (BSRS-5 ≥ 10) and 26 (78.4%) had poor sleep quality (PSQI ≥ 6). In the subgroup analysis, those with overlap FH and normal motility was associated with high proportion of psychiatric comorbidity than those with ineffective motility disorder (58.8% vs. 12.5%, $p=0.006$).

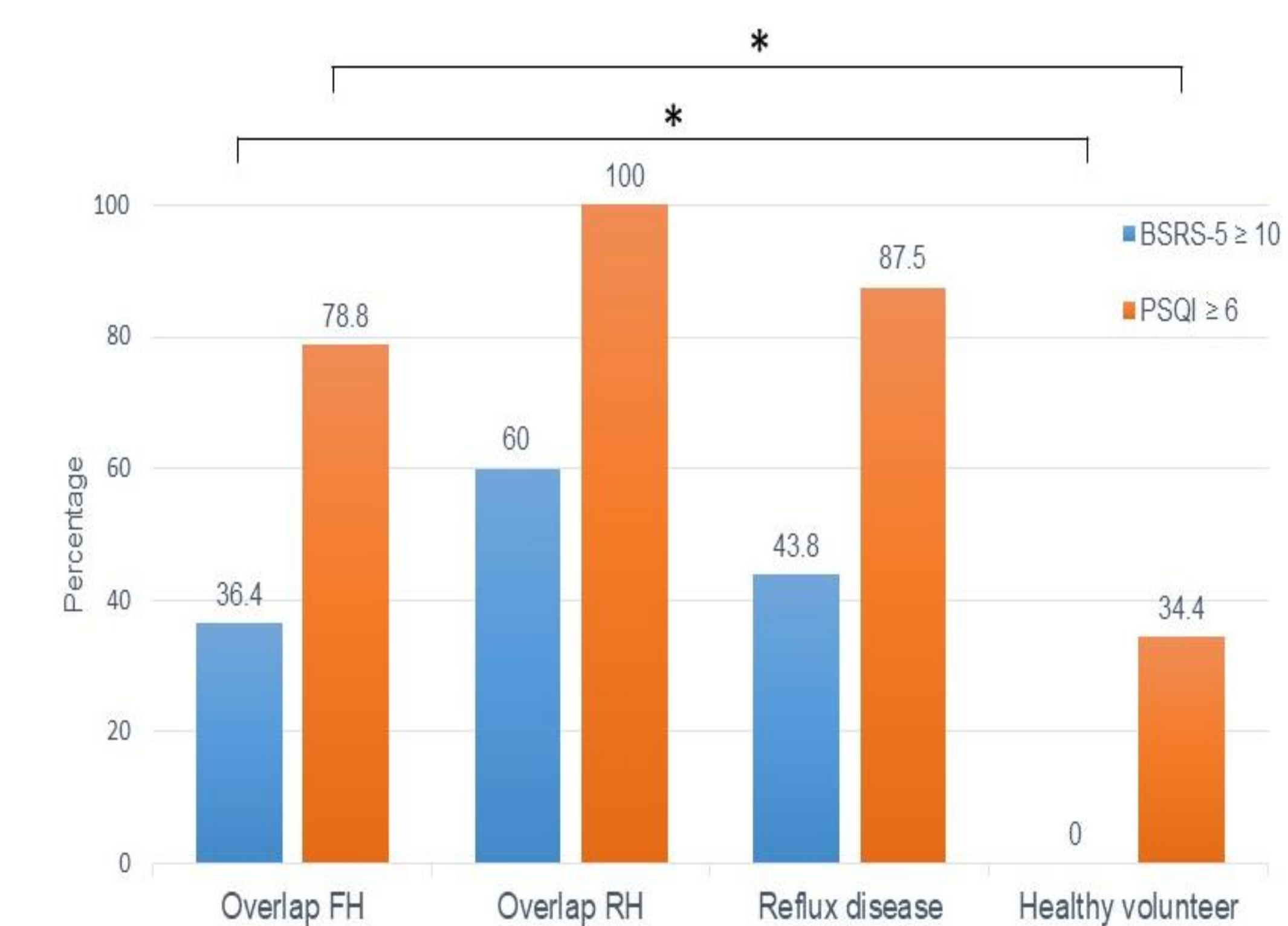
CONCLUSIONS

The clinical and psychologic characteristics are similar between overlap FH and the other refractory GERD patients. Patients with overlap FH had weaker esophageal contractility, more hiatal hernia, a high proportion of psychiatric comorbidity, and sleep dysfunction. Further studies to elucidate the pathophysiology of overlap FH are warranted.

Table Demographic, symptom, psychological, and sleep-quality profiles of patients with overlap FH and IEM or normal motility

| Overlap FH | IEM (n = 16) | Normal motility (n = 17) | p |
|-------------------------|-------------------------|--------------------------|----------|
| Age | 49.8 \pm 15.0 (30–77) | 48.8 \pm 14.3 (29–67) | 0.873 |
| Male gender | 3 (18.8) | 8 (47.1) | 0.085 |
| BW (kg) | 52.5 (44.3–71.5) | 57 (52–72.3) | 0.271 |
| BMI | 19.7 (18.5–25.6) | 23.1 (19.5–25.2) | 0.397 |
| DCI (mmHg cm/s) | 193.5 (121.5–404.8) | 927 (686–1438.5) | < 0.001* |
| Break size (cm) | 7.1 (5.3–9.5) | 2.1 (1.2–4.0) | < 0.001* |
| Hiatal hernia | 4 (25) | 3 (17.6) | 0.606 |
| RDQ | | | |
| Total score | 25.5 (14.8–34) | 21 (12.5–30) | 0.528 |
| Heartburn | 8 (5.3–13.3) | 7 (0–10.5) | 0.382 |
| Dyspepsia | 6.5 (1.3–10.5) | 8 (0–11.5) | 0.841 |
| Regurgitation | 8.5 (5.5–13.8) | 8 (2–14.5) | 0.731 |
| PAGI-SYM | | | |
| Total score | 26 (13–41.8) | 30 (16–45) | 0.732 |
| Heartburn/regurgitation | 14.5 (8.5–22.5) | 10 (5–17) | 0.206 |
| Fullness/early satiety | 4 (1.3–8.8) | 8 (3–13.5) | 0.124 |
| Nausea/vomiting | 2.5 (0.5–3.8) | 3 (0–6) | 0.911 |
| Bloating | 2 (0–4) | 4 (2–5.5) | 0.070 |
| Upper abdominal pain | 2 (0–4) | 4 (0–6) | 0.244 |
| Lower abdominal pain | 0 (0–2.8) | 0 (0–4) | 1 |
| BSRS-5 | | | |
| Total score | 5.5 (3.3–7.8) | 10 (3.5–16.5) | 0.120 |
| BSRS-5 ≥ 10 | 2 (12.5) | 10 (58.8) | 0.006* |
| PSQI | | | |
| Total score | 10 (5–13) | 12 (8.5–14) | 0.253 |
| PSQI ≥ 6 | 11 (68.8) | 15 (88.2) | 0.171 |

Figure Comparison of the psychological and sleep quality profiles of the overlap FH, overlap RH, reflux disease, and healthy volunteer groups



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