



ORIGINAL ARTICLE

Different risk factors between reflux symptoms and mucosal injury in gastroesophageal reflux disease



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KEYWORDS

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Abstract Gastroesophageal reflux disease (GERD) is diagnosed based on typical symptoms in clinical practice. It can be divided into two groups using endoscopy: erosive and nonerosive reflux disease (NERD). This study aims to determine the risk factors of reflux symptoms and mucosal injury. This was a two-step case-control study derived from a cohort of 998 individuals having the data of reflux disease questionnaire (RDQ) and endoscopic findings. Those with minor reflux symptoms were excluded. The first step compared symptomatic GERD patients with healthy controls. The 2nd step compared patients with erosive esophagitis with healthy controls. In this study, the prevalence of symptomatic GERD and erosive esophagitis were 163 (16.3%) and 166 (16.6%), respectively. A total of 507 asymptomatic individuals without mucosal injury of the esophagus on endoscopy were selected as healthy controls. Compared with healthy controls, multivariate analyses showed that symptomatic GERD patients had a higher prevalence of hypertriglyceridemia [odds ratio (OR), 1.83; 95% confidence interval (CI) 1.13–2.96] and obesity (OR, 1.85; 95% CI 1.08–3.02). By contrast, male sex (OR, 2.24; 95% CI 1.42–3.52), positive Campylo-like organism (CLO) test (OR, 0.56; 95% CI 0.37–0.84), and hiatal hernia (OR, 14.36; 95% CI 3.05–67.6) were associated with erosive esophagitis. In conclusion, obesity and hypertriglyceridemia were associated with reflux symptoms. By contrast, male sex, negative infection of *Helicobacter pylori*, and hiatal hernia were

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associated with mucosal injury. Our results suggested that risk factors of reflux symptoms or mucosal injury might be different in GERD patients. The underlying mechanism awaits further studies to clarify.

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Introduction

Gastroesophageal reflux disease (GERD) is the most common gastrointestinal diagnosis in outpatient clinics and is an expensive cost in the world [1]. The incidence increases fivefold in most Western countries and appears to be rising in some developed Asian countries [2]. Montreal consensus conference defines GERD as a condition, which develops when the reflux of stomach contents causes troublesome symptoms and/or complications [3]. In clinical practice,

diagnosis depends on the typical symptoms including heartburn and/or acid regurgitation. However, not all patients with typical reflux symptoms have evidence of mucosal injury on endoscopy. These inconsistent findings are known as a paradox phenomenon [4,5]. Some experts believe that erosive or nonerosive reflux disease (NERD) may be two different subsets or differently progressive stages of the disease.

The pathophysiology of GERD is multifactorial such as impaired esophageal clearance or diminished function of the antireflux barrier etc. [6,7]. The length or duration of

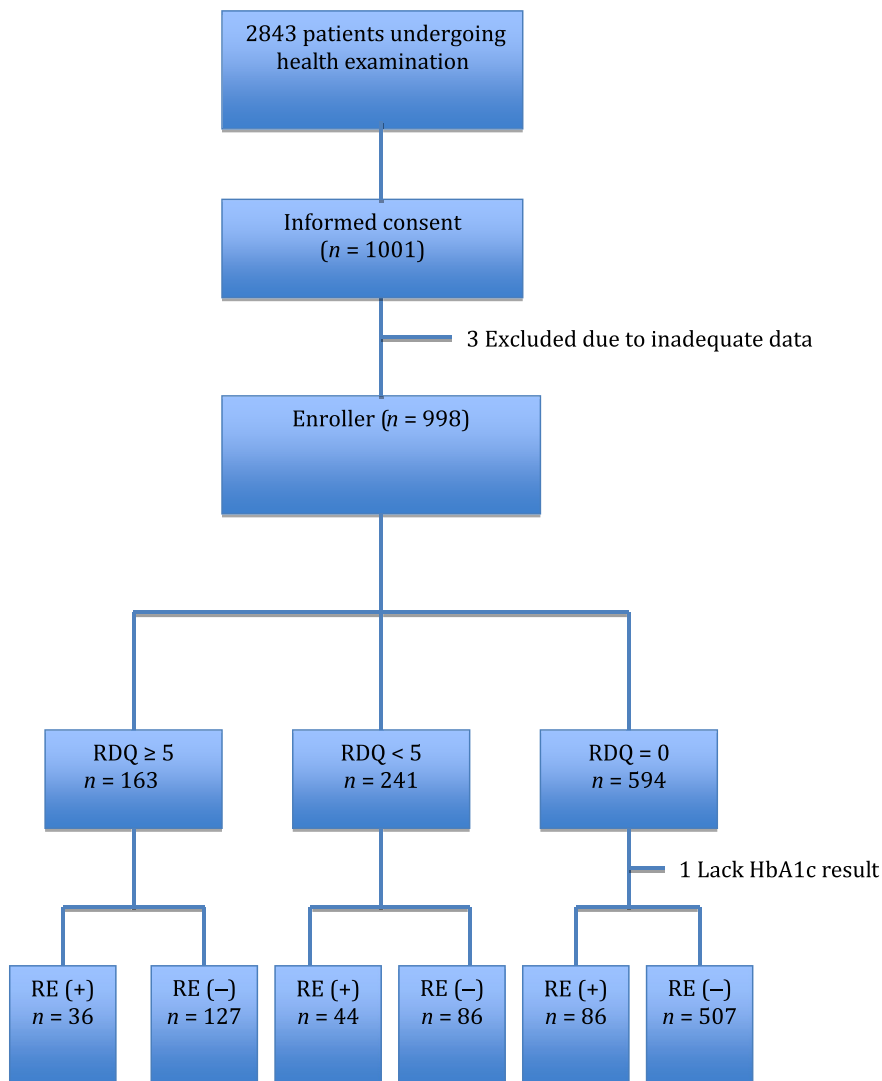


Figure 1. Flow chart of this study. HbA1c = glycated hemoglobin; RDQ = reflux disease questionnaire; RE = reflux esophagitis.

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