Symptom Association Probability for Acid and Nonacid Reflux in Patients with Erosive Esophagitis (EE) and Non-Erosive Reflux Disease (NERD)

Eduardo Savarino, Radu Tutuian, Patrizia Zentilin, Andrea Parodi, Giorgio Sammito, Simone Gugli, Daniel Pulh, Vincenzo Savarino

Introduction: Nonacid reflux has been shown to be able in inducing reflux symptoms in gastroesophageal reflux disease (GERD) patients. Non-erosive reflux disease (NERD) and erosive esophagitis (EE) are the most frequent phenotypic presentations of GERD. Aim: To evaluate symptom association probability (SAP) in patients with NERD and EE.

Methods: We evaluated 44 patients with EE (26M, median age 48; range 23-73 yrs), 173 with NERD (67M, median age 49; range 18-78 yrs) and 48 controls (22M, median age 44; range 22-77) using multichannel intraluminal impedance and pH while off-PPI therapy. All patients had typical reflux symptoms. We measured distal esophageal acid exposure time (AET), number of impedance-detected reflux episodes (acid, nonacid) and symptom association probability (SAP; positive if ≥95%).

Results: Symptom-reflux association with SAP in EE and NERD patients is shown in the Figure below. Out of 35 (75%) EE patients with an abnormal AET, 33 (75%) had a positive SAP. Twenty-seven (61%) patients had a positive SAP for acid reflux only, 2 (5%) for nonacid reflux only and 4 (9%) for both. Among the 8 (18%) patients with a normal AET and a positive SAP, 3 (7%) had a positive SAP for nonacid reflux only, 2 (5%) for acid reflux only and 3 (7%) for both. Out of 72 (42%) NERD patients with an abnormal AET, 64 (37%) had positive SAP. Fifty-two (31%) patients had a positive SAP for acid reflux only, 8 (5%) for nonacid reflux only and 6 (3%) for both. Among the 101 (58%) patients with a normal AET, 59 (34%) had a positive SAP. Twenty-two (13%) patients had a positive SAP for nonacid reflux only, 23 (13%) for acid reflux only and 14 (8%) for both.

Conclusions: Nonacid reflux clearly contributes to provoke reflux symptoms in both NERD and EE patients. The increased percentage of NERD patients whose symptoms are related to nonacid reflux could be due to the higher sensitivity of these patients to stimuli different from acid.  

Gender Specific Risk Factors for Reflux Esophagitis in Asia: Role of Age, Body Mass Index, Metabolic Syndrome and Menopause

Min-Jung Kang, Hyck-yung Jung, Hysook Park, Ji Min Jung, Hyung Joo Song, Hye Jung Yoon, Seong-Eun Kim, Tae Hun Kim, K-Nam Shim, Sung-Ae Jung, Sun Young Yi, Kwon Yoo, Ji Hwan Moon, Nicholas J. Talley

Background/Aim: Recent epidemiologic studies suggest that the prevalence of reflux esophagitis (RE) has been steadily increasing in Asia with a significant male predominance. The role of gender in RE is largely unexplored but may be multifactorial involving constitutional and behavioral factors. We aimed to evaluate the prevalence and risk factors for RE according to gender in Korea. Method: A total of 8,362 subjects (43.9% women, mean age 45±10 years) who had undergone endoscopy were enrolled at the health promotion center in Ewha Womans University Mokdong Hospital from January to December 2007. Each subject completed validated questionnaires, including data on demographics, alcohol drinking, smoking history, and menopause status. RE was defined by Los Angeles classification. Metabolic syndrome was defined as the Modified National Cholesterol Education Program (Prague classification) were found. There were no esophageal strictures. Esophagitis was grade C. In total, 19 cases of endoscopically suspected esophageal columnar metaplasia were identified. In a total of 2315 subjects, symptoms of heartburn or regurgitation occurring on at least 2 days a week, or moderate/severe symptoms of heartburn or regurgitation occurring on at least 1 day a week, OR 4.6; 95% CI 2.5-14.6, but age and body mass index

BMI, body mass index

Acid Reflux and Symptom Association in Gastroesophageal Reflux Disease: Signal Detection Theory Approach

Adnan Giral, Feyza Gunduz

Signal Detection Theory (SDT) estimates discriminability (d’), and criterion (c) reflects the response strategy from decision making experiments. The primary virtue of d’ is its value that does not depend upon c, but instead is a true measure of the internal response. The aim of this study was to find more accurate time window and pH threshold for acid reflux and symptom association by means of SDT approach and compares with Symptom Index (SI) and Symptom Associated Probability (SAP) method. Method: Patients with typical GERD symptoms (heartburn and/or regurgitation), benefit from proton pump inhibitors and abnormal DeMeester score have described as GERD patients. GERD patients who have normal (include esophagitis) upper gastrointestinal endoscopic and appropriate symptom diary retrieved from our pHmeter database. Number of Signal (window which contains at least one reflux event), Noise (window which does not contain reflux event), Hit (window which contains reflux event before symptom) and False Alarm (window which does not contain reflux event before symptom) parameters were found for different time windows (1, 2, 3, 15 and 30 minutes) and pH thresholds (pH<4 and pH<3) during awake period. SAP, d’ and C values were calculated by means of these parameters. Results were presented as means±SD. Results: The study included 12 patients (6 F/6 M, mean age 46 (range 24-68). SAP and d’ values for 1 min. windows were significantly higher than other windows for both pH thresholds. Irrespective to time windows, pH<4 values for d’ and SAP were higher than pH<4 values. There were no difference between 1 and 2 min. of SI values for both pH thresholds. Irrespective to time window, pH<4 values for SI were higher than pH<3 values. There were significant correlations between d’ and SAP values for pH<4 and pH<3 (r=0.7292 and 0.8131 respectively). There are no correlations between SI and both (d’ and SAP) values. C values of pH<4 and pH<3 did not differ from values of pH<3 (1.81±0.57), p>0.05. Conclusion: SDT approach suggests that 1 min. time window and pH<4 threshold seem to be more accurate than higher values.