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**Purpose:** To compare extent of esophageal acid exposure during sleep time among patients with non-erosive reflux disease (NERD) and abnormal pH test, erosive esophagitis (EE) and Barrett's esophagus (BE).

**Methods:** Consecutive patients who underwent 24-h esophageal pH testing off proton pump inhibitors for GERD were enrolled. The extent of esophageal acid exposure was assessed every two hours of the sleep period (0-2, 2-4, 4-6, 6-8 hrs.). Each period of two hours was evaluated for the mean total number of acid reflux events, mean duration of an acid reflux event (in minutes), mean frequency of acid reflux events (per hour) and mean percentage time pH < 4 (in minutes).

**Results:** A total of 50 GERD patients were enrolled (NERD - 20, EE - 17, BE - 13). Mean age and gender were similar among the different GERD groups (mean age and M/F ratio for EE, NERD and BE were: 62, 52, 62, and 15/2, 15/5, 12/1, respectively).

The mean time (minutes) elapsed from the last meal before the onset of sleep among the GERD groups: BE: 152, EE: 125, NERD: 92 ( $p = NS$ ). All 3 groups demonstrated a decline in esophageal acid exposure throughout the sleep period as assessed by the 4 sleep intervals. Mean percent time pH < 4 in BE: 32.3, 49.0, 29.2, 2.4; EE: 11.9, 11.5, 7.1, 7.7 and NERD: 9.7, 9.1, 4.0, 2.3 (all  $p < 0.05$ ). Mean number of reflux events in BE: 16.2, 15.4, 10.9, 8.9; EE: 7.1, 3.5, 3.2, 4.4 and NERD: 8.1, 6.6, 2.3, 3.5 (all  $p < 0.05$ ). Mean frequency (per hour) of acid reflux events in BE: 8.1, 7.7, 4.1, 4.1; EE: 3.6, 1.8, 1.6, 2.2 and NERD: 4.1, 3.1, 1.2, 1.8 (all  $p < 0.05$ ). All GERD groups demonstrated a significantly higher esophageal acid exposure in the first versus second half of the sleep period as assessed by the mean percent time pH < 4 (BE: 40.6 vs. 15.7, EE: 11.7 vs. 7.4, NERD: 9.2 vs. 3.1, all  $p < 0.05$ ). Patients with BE had a significantly higher distribution of esophageal acid exposure throughout the sleep period as compared to those with NERD and EE ( $p < 0.05$ ). There was no statistical difference in esophageal acid exposure during the different sleep intervals between patients with NERD and those with EE ( $p = NS$ ).

**Conclusions:** Esophageal acid exposure declines during the sleep period regardless of the GERD group. Patients with BE demonstrated the greatest decline during sleep period. There is no difference in esophageal acid exposure during sleep period between EE and NERD (with abnormal pH test) patients.

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#### The Effect of Additional Acupuncture Versus Doubling the Proton Pump Inhibitor (PPI) Dose on Symptoms Report of Patients Who Continued To Be Symptomatic on Standard Dose PPI - A Randomized Trial

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**Purpose:** To determine the efficacy of adding acupuncture as compared to doubling the PPI dose in GERD patients unresponsive to standard dose PPI. **Methods:** Thirty consecutive patients with classic heartburn symptoms unresponsive to standard dose PPI were enrolled into the study. Patients were evaluated by a demographics questionnaire, the validated GERD Symptom Checklist, GERD Symptom Assessment Score (GSAS) and the quality of life questionnaire (SF-36). All participants underwent an upper endoscopy on PPI once a day. Patients were excluded if erosive esophagitis or GERD-related complications were documented. Patients were randomized to either adding acupuncture or doubling the PPI dose over a period of 4 weeks. Acupuncture was delivered twice a week by an expert. Patients filled diary on a daily basis that documented severity and frequency of GERD-related

symptoms. Symptom score (frequency x severity) was calculated for previous 7 days at baseline and at 2 and 4 weeks of treatment in both groups.

**Results:** The two groups did not differ in gender (M/F), age and BMI (High PPI dose - 10/5, 48.9 ± 8.11, 31.4 ± 8.7, acupuncture group - 9/6, 52.7 ± 10.8, 32.3 ± 6.2, respectively,  $p = NS$ ). The acupuncture group demonstrated a significant decrease in the mean daytime heartburn scores from baseline to week 2 and 4 as compared to the high-dose PPI group (18.3, 8.5, 3.2,  $p < 0.05$  versus 12.8, 11.9, 16.4,  $p = NS$ , respectively). Mean nighttime heartburn scores were significantly improved only in the acupuncture group as compared to the high PPI dose group (18.07, 7.2, 3.6,  $p < 0.05$  versus 12.8, 14.4, 15.6,  $p = NS$ , respectively). Mean regurgitation scores were significantly improved only in the acupuncture group as compared to the high PPI dose group (14.8, 7.3, 3.67,  $p < 0.05$  versus 8.9, 6.2, 7.4,  $p = NS$ , respectively).

**Conclusions:** Adding acupuncture as compared to doubling the PPI dose was more effective in controlling GERD-related symptoms in GERD patients unresponsive to standard dose PPI.

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#### Prevalence of Barrett's Esophagus among Symptomatic Patients in a Community GI Practice

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**Purpose:** The prevalence of Barrett's Esophagus (BE) in the community setting is not well established. The aim of this study was to evaluate the prevalence of BE in a community practice, using the cohort of all patients undergoing endoscopy in a one year period.

**Methods:** We prospectively gathered data on all patients who had EGD's done between 1/1/04-12/31/04 in our private GI practice in Orlando, FL. Most were symptomatic with chronic GERD, unresolved dyspepsia or new epigastric pain. There were 849 consecutive patients who underwent gastroscopy. Long segment BE (LSBE) was defined as > 3 cm of columnar lined epithelium (CLE) with specialized intestinal metaplasia (SIM) on biopsy. Short segment BE (SSBE) was < 3 cm of CLE with SIM. BE was established by multiple biopsies.

**Results:** Of 849 consecutive patients undergoing gastroscopy, 31 were done for Barrett's surveillance, leaving 818 patients, of whom 3 (0.37%) had LSBE and 9 (1.1%) had SSBE. The combined prevalence of BE was 1.47%. All of these were newly diagnosed cases of BE. There were 5 patients who were felt to have CLE on gastroscopy, but biopsies did not reveal SIM.

**Conclusions:** The prevalence of BE in our private GI practice was 0.37% for LSBE and 1.1% for SSBE. This was a cohort of patients who had some criteria for gastroscopy, and not a random population. Nonetheless, these results mirror the most recently published population based data from outside the USA. This suggests reproducibility among community based practices, as opposed to the higher prevalence data reported from more selected populations.

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#### Findings on Esophageal Manometry Are Not Predictive of Symptomatic Non-Acid Reflux

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**Purpose:** 24-hour multichannel intraluminal impedance and pH (MII-pH) esophageal monitoring allows detection of both acid and non-acid gastroesophageal reflux (GER) episodes. This technology is useful in patients who have persistent GER symptoms on PPIs permitting association of symptoms with the presence of acid or non-acid GER. MII and esophageal manometry (MII-EM) allows both functional and manometric evaluation of the esophagus. It is not known if patients with a positive MII-pH study for non-acid reflux (NAR) have different esophageal MII-EM findings than those who do not have NAR.