

Table 1. Frequency-intensity scores of typical GERD symptoms (mean±SD) both pre- and postoperatively in LSG + HHR group and LSG group

| | Preoperative assessment | | Postoperative assessment | |
|---------------|-------------------------|-----------|--------------------------|-----------|
| | LSG + HHR group | LSG group | LSG + HHR group | LSG group |
| Heartburn | 1.41±1.95 | 1.13±1.71 | 1.31±2.01 | 0.47±1.36 |
| Regurgitation | 1.32±1.82 | 1.07±1.68 | 1.26±1.99 | 0.60±1.47 |

were found in any parameters before and after the surgery in LSG + HHR group.

Conclusions: At follow-up, in patients submitted to LSG the prevalence of typical GERD symptoms significantly decreased. Moreover, in patients who underwent LSG with concomitant HHR the heartburn intensity-frequency score was higher compared to patients who received only LSG.

P.04.13

LONG-TERM RESULTS OF RADIOFREQUENCY ENERGY DELIVERY (STRETTA) FOR THE ENDOSCOPIC TREATMENT OF GASTROESOPHAGEAL REFLUX DISEASE

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Background and aim: Radiofrequency energy (RF) treatment (Stretta) is an alternative option to more invasive surgical procedures for well selected patients with gastroesophageal reflux disease (GERD). At this time, in the follow up studies the Stretta procedure has been proven to be very safe for the treatment of GERD. Randomized sham-controlled studies as well as single and multicenter prospective trials have been conducted. The complication rate is 1.5%, less than the published complication rate for laparoscopic fundoplication.

Material and methods: Since June 2002 to May 2012 we have treated a total of 78 patients with the Stretta procedure and nineteen of them (11 females, 8 males) reached by the end of 2011 a eight years follow up (range 7.9–9.2, median 8.6). All patients undergoing the RF procedure were prospectively evaluated with upper endoscopy, esophageal manometry, 24-hour pH testing, SF-36 surveys, and GERD-specific questionnaires (GERD HRQL).

Results: After eight years, 13 out of 19 patients (68.4%) were still completely off PPIs, only eight patients using oral antacids on a weekly basis. In good responders to Stretta, the Heartburn Score, the GERD-specific Quality of Life Score and the General Mental and Physical Quality of Life Scores, that were significantly ameliorated at the 12 and 48 months follow up, were still improved after eight years. All these patients were submitted to endoscopy and esophageal manometry: none of them showed or esophagitis or Barrett esophagus, while the median LES pressure, that showed an overall not significant improvement after 48 months, was maintained after 8 years. In six patients (31.5%) Stretta lost efficacy after three (3 patients), four (2 patients) and six years (1 patient) after the RF delivery; they started again the use of PPI and five of them underwent to laparoscopic anti-reflux surgery without any technical difficulty.

Conclusions: Although the number of patients with a long standing follow up in our cohort is still low, this data confirm that RF delivery to LES is safe and durably improves symptoms and quality of life in well selected GERD patients; moreover, for those that might show only transient or even no efficacy, Stretta would act as a “bridge” therapy between medical and surgical treatment.

P.04.14

THE EVALUATION OF THE EFFICACY OF WEIGHT LOSS IN CONTROLLING SYMPTOMS IN PATIENTS WITH GASTROESOPHAGEAL REFLUX SYMPTOMS

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Background and aim: An association between obesity and gastroesophageal reflux (GERD) symptoms has been reported in a large number of studies. Weight loss is commonly recommended as part of first-line management of GERD despite the paucity of published clinical trials.

The aim of the study was to evaluate the effect of weight loss in controlling symptoms in a group of patients with GERD. The secondary aim was to evaluate the progressive reduction of proton pump inhibitors (PPI) therapy after the weight loss.

Material and methods: We enrolled a group of 50 overweight and obese patients with typical and atypical GERD symptoms with previous erosive esophagitis endoscopically proven. These patients were evaluated with two validated questionnaires (QOLRAD and VAS) to detect the prevalence of GERD related symptoms and the ongoing PPI therapy. All patients underwent an anthropometric evaluation (BMI, height, weight, abdominal circumference) and received a personalized hypo-caloric diet with 1200–1500 kcal for women and 1500–1800 kcal for men. The hypocaloric diet was considered effective if at least of 10% weight loss was obtained in each patient. The hypocaloric diet was completed within 6 months. The same anthropometric evaluation and questionnaires were performed at the end of treatment. The results were evaluated with a Student paired t-test and considered statistically significant when p value was <0.05.

Results: Male/female ratio was 0.78 (22/28). Mean age was 49.3 (±11.8). Mean BMI decreased from 30.3 (sd ±4.1) to 25.7 (±3.1) (p<0.05) and the mean weight loss from 82.1 (±16.9) to 69.9 (±14.4) after hypocaloric diet (p<0.05).

Symptoms perception decreased both with QOLRAD and VAS scale (p<0.05). In particular, heartburn decreased from 3.68 (±1.9) to 0.28 (±0.4) in QOLRAD scale and from 5.7 (±1.8) to 0.6 (±0.6) in VAS scale (p<0.05). PPI therapy was completely discontinued in 27/50 (54%) patients, was halved in 16/50 (32%) patients. Only 7/50 (14%) continued the same PPI dosage.

Conclusions: We can conclude that a 10% of weight loss is recommended in all patients with GERD-related symptoms. This weight reduction could be able to reduce not only symptoms perception but also the dose of PPI therapy.

P.04.15

DOES STANDARDIZED DIET IMPROVE PROTON PUMP INHIBITOR RESPONSE IN GERD PATIENTS?

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Background and aim: Proton pump inhibitors (PPIs) are considered the gold standard therapy for gastroesophageal reflux disease (GERD). The additional role of dietary habits to improve symptoms relief remains to be established. Our aim is to evaluate the effect of a standardized diet added to PPIs' therapy on symptoms' improvement in GERD patients.

Material and methods: We enrolled 16 patients (7M and 9F; Age range 18–65, BMI 27.2±4.44) with symptoms of GERD. All subjects received 20mg of pantoprazole twice a day for twelve weeks. Each patient underwent a 24h pH-impedance monitoring (pH-MII) both off- and on-therapy at baseline and during the last week of treatment, respectively. Patients were randomly divided into two groups: 7 were treated both with PPIs and a standardized dietary regimen (D+ patients: 4M and 3F; BMI 29.89±3.91); 9 were treated only with PPIs (D- patients: 3M and 6F; BMI 25.83±4.18). D+ patients were instructed to follow a standardized nutrients' balanced diet (protein 16–18%, fat 27%, CHO 55–57%), energetically adapted to each subject, and to avoid “refluxogen” food consumption. Symptoms (heartburn, pain and regurgitation) were scored by using Visual Analogue Scale (VAS), while diet adherence was evaluated by food frequency questionnaire. Data were analyzed using t-test for paired and unpaired samples.

Results: We found a significant decrease of BMI in D+ group respect of D- (D+ ΔT0-T12= 3.00±2.13 and D- ΔT0-T12= 0.22±0.70; p<0.05). Improvement of heartburn and pH-MII parameters was observed in both groups. Patients on diet reported a significantly higher improvement of heartburn if compared to subjects receiving only PPIs (VAS: 36.06±25.70 mm; 25.83±24.21; p<0.05). We also observed a significantly higher decrease of distal (38.00±19.98 vs

14.56±16.29; $p < 0.05$); and proximal (21.00±5.07 vs 7.67±12.95; $p < 0.05$) acid refluxes in subjects D+ and D-, respectively.

Conclusions: A standardized diet further improves GERD outcome of patients already treated with PPIs. However it remains to be established whether the symptoms and pH-MII parameters improvement depends on BMI decrease or qualitative characteristics of diet.

P.04.16

ENDOSCOPIC POST FUNDOPLICATIO: IS IT NECESSARY?

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Background and aim: GERD is a chronic, relapsing disease, with complications (EB). The pharmacological and surgical treatments antireflux are effective in controlling the symptoms of reflux. The laparoscopic fundoplication is effective in the prevention of pathological reflux acids and non-acids. The aim of our study is to evaluate the effectiveness of endoscopy after fundoplication.

Material and methods: From February 2011 to October 2012 we performed endoscopy in 15 patients who underwent laparoscopic fundoplication for gastroesophageal reflux. The indication to perform endoscopy was a continuation or recurrence of reflux-related symptoms or onset of new symptoms, dysphagia. 12 patients had 15–18 weeks after complaining dyspeptic symptoms (postprandial bloating and heaviness, regurgitation, etc.), 3 patients had dysphagia to solids after 8–12 weeks after surgery. All patients were subjected to EGDS and has been evaluated the morphology of the gastroesophageal junction see the classification of Hill skinfold mucosa along the lesser curve with endoscopy in retroversion.

Results: 8 patients was grade I sec. Classification Hill (prominent fold mucosa), 4 patients were grade II sec. Classification Hill (fold mucosa present with the opening and closing), 3 patients were grade III sec. Classification Hill. Patients with dysphagia had the fold mucosa not prominent and therefore fell within the grade III.

Conclusions: EGDS after fundoplication is a simple procedure that allows to verify the effectiveness of surgical treatment, gastroesophageal continence and the possible presence of recurrent hernia. Must be made if patients have symptoms or persistent symptoms of new onset.

P.04.17

EFFECT OF HYDROPINIC TREATMENT ON GASTRIC EMPTYING IN DYSPESIA

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Background and aim: Dyspeptic syndrome has always been a health problem of great interest due to the fact that it is so widespread. This interest has then become even greater in recent years, due to the increase in pharmaceutical expenditure. In a significant percentage of dyspeptics, slowed gastric emptying underlies the symptoms. Treatments based on acid secretion inhibitors and prokinetics are often inefficient in actually eliminating or reducing symptoms. Hydropinic treatments based on thermal waters are often recommended and prescribed for this type of pathology. There is, however, no concrete proof, particularly in physical-pathological terms, of their real efficiency. This study aims to assess the effect of a Fonte Tavina (Salò) water-based hydropinic treatment on the gastric emptying of solids and on symptoms reported by patients suffering from functional dyspepsia.

Material and methods: 15 patients suffering from primary dyspepsia and 15 healthy (non-dyspeptic) controls were studied. Respectively 14 and 13 completed the experiment. All subjects were subjected to a treatment trial that entailed the daily administration of 1,500 cc thermal water (Uliveto) for 10 days. Before and after the supplementation period, each subject involved in the study was subjected to a gastric emptying assessment by means of a "13C-octanoic acid breath test". A clinical score was also used to assess changes seen in symptoms.

Results: In terms of mean ± standard deviation results, dyspeptic subjects showed a clear improvement in emptying parameters (T1/2 and Tlag) after hydropinic treatment, in addition to a reduction of average symptom scores.

Conclusions: Thermal treatment based on oligomineral water would appear to improve emptying of solids in dyspeptic patients. Medium- to long-term longitudinal studies were required to verify the persistence of this effect.

P.04.18

PERCEPTUAL AND MULTIPARAMETRIC ANALYSIS OF THE VOICE IN GERD PATIENTS

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Background and aim: Laryngopharyngeal reflux (LPR) is defined as the reflux of gastric content into larynx and pharynx, and represents one of the most common atypical manifestations of gastroesophageal reflux disease (GERD). LPR may be manifested by morphologic and functional changes in the larynx with associated clinical symptoms. In particular, LPR patients frequently experience voice-related symptoms. Few studies have performed a perceptual and multiparametric analysis of voice-related changes in GERD patients. The aim was to objectively assess voice-related changes, by means of perceptual and multidimensional analysis, in GERD patients as compared to healthy volunteers.

Material and methods: Twelve patients with GERD, diagnosed on the basis of upper endoscopy and/or esophageal impedance and pH study, and 12 healthy volunteers were enrolled.

All patients underwent two different tests to investigate voice-related parameters: a perceptual evaluation of 5 parameters using the GRBAS scale (G stands for grade of overall hoarseness, R for roughness, B for breathiness, A for asthenia, and S for strain), and a multidimensional analysis of 33 parameters with the Multi-Dimensional Voice Program (MDVP). Regarding the MDVP analysis, we particularly observed the overall most significant parameters of voice quality (mF0, Jitt, vF0, sPPQ, Shim, vAm, sAPQ, NHR, VTI, SPI, ATRI, FTRI, DVB, DSH).

Results: The GERD group and the control one were comparable for age and sex. Regarding the perceptual evaluation, GERD patients showed a clinically significant alteration, as compared with the control group, for the following parameters: G ($p < 0.0001$), R ($p < 0.0001$), S ($p = 0.04$). Data of MDVP analysis revealed a significant difference between GERD patients and controls about parameters of fundamental frequency perturbation (vF0 and sPPQ, respectively $p = 0.02$ and 0.008), and parameters of amplitude perturbation (Shim, vAm and sAPQ, respectively $p = 0.002$, 0.0004 and 0.0001).

Conclusions: Even considering the little number of patients, our comparative analysis demonstrated worse results for voice-related changes in GERD patients, both from the perceptual analysis that from the multiparametric voice assessment. In particular, GERD patients showed rougher and more strained voice with inability to maintain constant the amplitude and the fundamental frequency. Future investigations with a greater number of patients are warranted to confirm these preliminary data.

P.04.19

TASTE ALTERATIONS IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

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Background and aim: A higher incidence of mouth burning sensation and sensitivity to sour taste has been found in some patients with gastroesophageal reflux disease (GERD). Oral cavity alterations have been mentioned as causal