Background: Obesity is one of the most important public health problems according to the CDC. Endoscopic Bariatric Therapies (EBTs) are promising alternatives to conventional surgical treatment of obesity. Among the EBTs, the Endoluminal Primary Obesity Surgery (POSE) and "Transoral Vertical Endoscopic Gastroplasty" (TOGA) have been introduced as foremost techniques. However, the effectiveness and safety of these procedures are still not clear in literature. According to the FDA, EBTs efficacy thresholds for moderately invasive procedures are: (1) %TBWL at least 8% higher than the SHAM group at 12 months or; (2) ≥ 50% of patients with a %TBWL > 5%. Therefore, we aimed to compare efficacy and safety through a systematic review and meta-analysis of the endoscopic gastroplasty techniques versus conservative treatment according to the FDA thresholds. Methods: This review was conducted according to the PRISMA guidelines. We extensively searched MEDLINE, EMBASE, Cochrane CENTRAL, Lilacs/Bireme and gray literature. Randomized controlled trials (RCT) enrolling obese patients comparing either POSE or TOGa procedure to SHAM or diet/exercise were considered eligible. The outcomes assessed evaluated using JADAD Scale and GRADE system, respectively (Table 1). Results: Initial search identified 6014 records. After application of eligibility criteria, 3 RCTs were included in the meta-analysis. The total sample was 459 patients distributed among 427/597(71.5%) of the entire group; 175/216(81%) of the up adjusted group; 249/582(42.7%) of the down adjusted group. The responder rate for the Intervention group was 17,87% and 16,01% higher than the control group at 6 and 12 months, respectively. Patients undergoing endoscopic treatment lost 7.05kg and 4.99kg more (p<0.01) (figure 1). Regarding EWL, there was no statistical difference between groups; EWL in intervention group was 17,87% and 16,01% higher than the control group at 6 and 12 months (p>0.07). EWL for gastroplasty group was 27 06% and 27 54%, at 6 and 12 months. Patients undergoing endoscopic treatment lost 7 05kg and 4 99kg more than patients in control group at 6 and 12 months. The responder rate for the Intervention group was 44.31% at 12 months, less than the FDA threshold. The total and serious adverse events rates for gastroplasty group ranged from 52.9% to 77.8% and 5.0 to 5.2%, respectively. On the current literature, the safety could not be assessed. Conclusion: The endoscopic gastroplasty is more effective than conservative therapies for the primary treatment of obesity but do not achieve FDA thresholds. PROSERO Registry: CRD42017065604 Keywords: Obesity; gastroplasty; endoscopy; endoluminal therapy; endoscopic therapy; endoscopic suture; systematic review; metaanalysis.

Table 1: Evaluation of biases risk and evidence quality. Tab 1a: JADAD Scale; Tab 1b: GRADE System.

Figure 1: TBWL at 12 months. Endoscopic Gastroplasty Vs Conservative Therapy. FDA threshold: TBWL at least 8% higher than SHAM group.

REFERENCES:

Tu1901
WEIGHT OUTCOMES OF LAPAROSCOPIC SLEEVE GASTRECTOMY VERSUS ENDOSCOPIC SLEEVE GASTROPLASTY: A CASE CONTROL STUDY.
Lea Fayad1, Atif Adam2, Tokumbo Ajayi1, Margo K. Dunlap2, Dilhana S. Badurdeen1, Christine Hill1, Michael Schweitzer1, Megan Karcher1, Sepehr Lalaei2, Anthony N. Kalloo1, Mouen A. Khashab2, Lawrence Cheskin1, Vivek Kumbhari1
1Johns Hopkins Hospital, Baltimore, MD; 2Division of Gastroenterology and hepatology, Johns Hopkins Medical Institutions, Baltimore, MD.

Background: Laparoscopic sleeve gastrectomy (LSG) is now the most commonly performed bariatric surgical procedure with data demonstrating efficacy similar to that of Roux-en-Y gastric bypass. Endoscopic sleeve gastroplasty (ESG) is an emerging minimally invasive endoscopic bariatric procedure that involves reducing the size of the gastric lumen to a similar size as LSG with a full thickness endoscopic suturing device. The appeal of ESG is that it is performed as an outpatient procedure, has a lower cost than surgery and faster recovery time. A question commonly asked of the providers performing ESG is how it compares to LSG in terms of weight loss. However, there is a paucity of research comparing ESG to LSG with no case match study being performed to date. Aims: Our study aims to compare weight outcomes and adverse event profile of ESG versus LSG over a 6 month follow-up period.

Methods: This study was a retrospective, case control study comparing patients who underwent ESG and LSG at a single academic center between 2015 and 2017. Post procedure nutrition guidelines and frequency of follow-up visits with the nutritionist were similar between the cohorts. Patients were matched 3:1 by age, sex, and body mass index (BMI) (Table 1), with 21 patients in ESG arm and 65 patients in the VSG arm. Patients in both groups were evaluated at 1 and 6 months post procedure to determine percent total body weight loss (%TBWL). Results: At 1 month follow-up, there was no significant difference in %TBWL between the ESG group (9% ± 4.13) and the LSG group (9% ± 4.99) (p-value: 0.951). At 6 month follow-up (Figure 1), %TBWL was significantly greater in the LSG group (30.86% ± 14.44) than the ESG group (21.57% ± 11.32) (p-value: 0.002). Since bariatric surgery is only covered by insurance for BMI >40 group. However, in patients with BMI <40, LSG patients had a higher statistically significant %TBWL at 6 months (coefficient = 11.43, p-value: 0.002). Age at procedure and gender had no significant effect on the %TBWL at 1 month follow up for BMI <40 or BMI >40. At the 6 month follow-up, age at procedure had a modest significance in BMI >40 group (coefficient = 0.29, p-value: 0.096). Overall, ESG patients had an adverse event rate of 4.76% and LSG patients had an adverse event rate of 12.31% (p-value: 0.32). Conclusion: Both ESG and VSG achieve a significant %TBWL at 6 months. ESG achieves comparable short term %TBWL to LSG, but LSG achieves greater %TBWL at 6 months follow up, particularly in patients with BMI >40. Thus, ESG may be an effective minimally invasive alternative to LSG, but patients with morbid obesity (BMI >40) may find greater benefit from LSG.

Table 1 – Baseline demographics of ESG and VSG patients matched 3:1 by age, sex, and BMI.

<table>
<thead>
<tr>
<th>Mean ± SD</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESG (n = 21)</td>
<td>VSG (n = 65)</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>47.08 ± 9.45</td>
</tr>
<tr>
<td>Male</td>
<td>6 (28.57%)</td>
</tr>
<tr>
<td>Female</td>
<td>15 (71.43%)</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>43.89 ± 6.69</td>
</tr>
</tbody>
</table>

Figure 1 – Percent total body weight loss in ESG and LSG patients at 1 month and 6 months.

Tu1902
EFFICACY OF EMPIRIC URSODIOL FOR THE TREATMENT OF CHRONIC ABDOMINAL PAIN IN ROUX-EN-Y GASTRIC BYPASS PATIENTS
Pichamol Jirapinyo1, Janese Laster2, Hugo G. Guedes3, Mohsen Hasanin1, Christopher C. Thompson3
1Brigham & Women's Hospital, Boston, MA; 2Georgetown University Hospital, Washington, DC; 3Universidade de São Paulo, Sao Paulo, Brazil; 4University of Louisville, Louisville, KY

Introduction: Remnant gastroplasty is a cause of chronic abdominal pain in Roux-en-Y gastric bypass (RYGB) patients. It may be diagnosed via device-assisted enteroscopy or 99mTc-hepato-iminodiacetic acid (HIDA) scan. Empiric treatment with ursodiol may be considered in RYGB patients with abdominal pain and a negative work-up. Efficacy of empiric ursodiol treatment is unknown. Aim: (1) Assess the efficacy of empiric ursodiol at treating remnant gastroplasty in RYGB patients with abdominal pain and negative work-up (2) Assess if concomitant PPI use with ursodiol is necessary. Materials and Methods: Retrospective review of prospectively collected data of RYGB patients with chronic abdominal pain. Patients with marginal ulceration, gastrogastic fistula, abdominal hernia and intussusception were excluded. Part I: Clinical success rate of ursodiol for abdominal pain in RYGB patients with negative work-up. Success rate was compared to patients with findings of remnant gastroplasty confirmed on device-assisted enteroscopy and HIDA scan. Part II: Average time to pain resolution determined in patients treated with ursodiol with and without PPI. Statistical Analysis: Chi-square test compared clinical success rates. Time-to-event analysis assessed association between PPI and pain resolution. Results: 90 RYGB patients (86F) with abdominal pain were included. Average age and BMI were 50.1±11 years and 34.1±8.2 kg/m2. Patients were 7.4±4.9 years post-RYGB. Abdominal pain located at the epigastrium (41%), LUQ (25%), RUQ (11%), RLQ (9%), mid-abdomen (17%) and diffuse abdomen (1%). In 34 patients, 17 (19%) and 39 (43%) were determined to have remnant gastroplasty based on device-assisted enteroscopy and HIDA scan, respectively. The remaining 56 patients (61%) were empirically treated. Part I: 75% of patients were on ursodiol 500mg twice a day. Follow-up data was available in 85 patients. Of 85, 69 reported improvement and/or resolution of abdominal pain (85% clinical success rate). Clinical success rate by method of diagnosis was 81%, 87% and 80% for device-assisted enteroscopy, HIDA scan and empiric ursodiol treatment. No difference in clinical success rate among the 3 diagnosis methods (p=0.72). Part II: 75% of patients were on ursodiol + PPI therapy, while the remaining 25% were on ursodiol alone. Clinical success of the treatment strategies were similar (84% vs 89% for ursodiol + PPI vs ursodiol alone, p=0.55). Median time to pain resolution was similar for both (96 days vs 91 days for ursodiol + PPI vs ursodiol alone, p=0.54) (Figure 1). Conclusion: Empiric ursodiol should be considered for treatment of possible remnant gastroplasty in RYGB patients who present with abdominal pain and negative work-up. PPI may be discontinued in the absence of marginal ulceration.