Methods: Data was collected from four major referral centers representing diverse geographical areas of Mexico: central—Mexico City (two centers, years 2016-2020), south (Veracruz, years 2015-2020) and north (Monterrey, years 2013—2020). All consecutive cases referred for HREM were entered into a data base and analyzed using Chicago 3 classification. Data was evaluated using chi-square to compare frequencies among groups.

Results: 2,932 patients included: Central n = 877(29.9), North n = 1003(34.2), South n = 1052(35.9). Mean age 47.9(11-93), women 1,795(61.2), men 1,137(38.8). Nationwide, the most common indications for testing were: GERD n = 1677(57.2), followed by dysphagia 587(20), atypical GERD 244(8.3), post-operative GERD 230(7.9), chest pain 114(3.9), and post-operative dysphagia 78(2.8). HREM was normal in 1,468(49.9) patients. Table shows the diagnostic distribution among centers: Central-Mexico had more abnormal cases 531(60.5) ($p < 0.0.001$) vs 407(40.6) North and 532(50.6) South. Achalasia was more commonly diagnosed in the South n = 104(19.5) whereas outlet obstruction 39(967) $p < 0.001$ and spastic disorders were more common in the North 47(11.8) $p = 0.002$. Weak peristaltic disorders were more common in Central-Mexico 369(78.8) $p < 0.001$.

Conclusion: This study represents the first large comparative multicenter HREM data base project in Mexico. In this cohort, most patients receiving HREM are women and those whose indication was GERD. These findings indicate variable regional geographical distribution of HERM diagnosis. Our study suggests that further investigation into the causes and epidemiological distribution of motility disorders is warranted.

791 RECURRENT HIATAL HERNIA A HIGH PREDICTOR OF PATHOLOGIC REFLUX AND NEED FOR REINTERVENTION

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Anti-reflux surgery (ARS) has been postulated to have high failure rates, which may approach 50% depending upon hiatal hernia size. Most failures are thought to be related to wrap disruption or hiatal hernia recurrence. Recently, diaphragmatic mesh augmentation has been shown to reduce hiatal hernia recurrence. We aimed to determine factors that influence recurrence based on vigilant imaging and diagnostic pH studies, and the need for surgical reintervention.

Methods: A prospectively maintained database of all patients undergoing index robotic ARS (including Hill, Nissen, Toupet, and Linx procedures) with Phasix ST ® mesh was queried. Between December 2016 and July 2020, 134 patients were identified of which 92 met inclusion criteria for post-operative barium esophagram performed at routine intervals (6, 12, or 24-months) or for recurrent symptoms. Median follow-up time was 11.4 months. Clinical characteristics, manometry, pH studies, as well as surgical approach was evaluated. Radiographic recurrences were then associated with endoscopic confirmation and rates of surgical re-intervention.

Results: Radiographic recurrence >2 cm was noted in 9 (9.8%) patients, of which 44% were symptomatic, compared to 36% of those without radiographic recurrence ($p = 0.620$). Endoscopy confirmed recurrence in 67% of patients with radiographic recurrence versus 0% without ($p = 0.001$). When all radiographic recurrences, including those <2 cm, were evaluated, 17 (18%) were identified, of which 53% of patients were symptomatic. Endoscopic and pH studies confirmed recurrences in 75% and 71% of these patients, respectively. Overall reintervention rates were 23% in the setting of any radiographic recurrence versus 1.3% without ($p = 0.001$).

Conclusion:Recurrence rates following robotic ARS and hiatal hernia repair with mesh augmentation appear low with nearly 1-year follow-up. Prior to surgical reintervention, endoscopic and pH studies are warranted to confirm symptomatic recurrence. Recurrent hiatal hernias, including those <2 cm, can lead to abnormal pH studies that merit reintervention at rates higher than those without evidence of recurrence. Longer term follow-up is required to optimally delineate true recurrence patterns.

792 OUTCOMES AFTER TOTALLY MINIMALLY INVASIVE VERSUS HYBRID OR OPEN IVOR LEWIS ESOPHAGECTOMY: RESULTS FROM THE INTERNATIONAL ESODATA STUDY GROUP.

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To compare complications following totally minimally invasive (TMIE), laparoscopically assisted (hybrid) and open Ivor Lewis esophagectomy in patients with esophageal cancer. Three randomized trials have reported benefits for minimally invasive esophagectomy. Two studies compared TMIE versus open esophagectomy and another compared hybrid versus open Ivor Lewis esophagectomy. Only small retrospective studies compared TMIE with hybrid Ivor Lewis esophagectomy.

Methods: Data were used from the International Esodata Study Group assessing patients undergoing TMIE, hybrid or open Ivor Lewis esophagectomy. Primary outcome was pneumonia, secondary outcomes included incidence and severity of anastomotic leakage, (major) complications, length of stay, escalation of care and 90-day mortality. Data were analyzed using multivariate multilevel models.

Results: In total, 4733 patients were included in this study (TMIE:1472, hybrid:1364 and open:1897). Patients undergoing TMIE had lower incidence of pneumonia compared to hybrid (10.9% vs 16.3%, Odds Ratio (OR):0.56, 95%CI: 0.40–0.80) and open esophagectomy (10.9% vs 17.4%, OR:0.60, 95%CI: 0.42–0.84) and had shorter length of stay (median 10 days (IQR 8–16)) compared to hybrid (14 (11–19), $p = 0.041$) and open esophagectomy (11 (9–16), $p = 0.027$). Patients undergoing TMIE had higher rate of anastomotic leakage compared to hybrid (15.1% vs 10.7%, OR:1.47, 95%CI: 1.01–2.13) and open esophagectomy (7.3%, OR:1.73, 95%CI: 1.26–2.38). No differences were reported between hybrid and open esophagectomy.

Conclusion: Compared to hybrid and open Ivor Lewis esophagectomy, TMIE resulted in a lower pneumonia rate, a shorter hospital length of stay but a higher anastomotic leakage rate. The impact of these individual complications on survival and long-term quality of life should be further investigated.

793 PATIENTS' PREFERENCES FOR ACTIVE SURVEILLANCE OR STANDARD ESOPHAGECTOMY AFTER NEOADJUVANT CHEMORADIOTHERAPY: A DISCRETE CHOICE EXPERIMENT IN PATIENTS AFTER STANDARD ESOPHAGECTOMY

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Active surveillance after neoadjuvant chemoradiotherapy for locally advanced resectable esophageal cancer is currently topic of investigation. In a discrete choice experiment, patients' preferences can be quantified by asking patients to state their preference over hypothetical treatment alternatives. The aim of the present study was to assess patients' preferences for either active surveillance or standard esophagectomy in patients who underwent neoadjuvant chemoradiotherapy followed by surgery without signs of recurrence.

Methods: A discrete choice experiment was performed in esophageal cancer patients who underwent neoadjuvant chemoradiotherapy followed by standard esophagectomy at least one year earlier. Patients completed a questionnaire consisting of eighteen choice sets considering active surveillance or standard esophagectomy. Treatment alternatives were characterized by attributes with varying attribute levels hypothesized to influence treatment choice: five-year survival, short-term and long-term health related quality

of life (HRQOL), annual number of diagnostics required and the risk that esophagectomy is still necessary later in time. The importance of attributes and willingness to trade-off 5-year survival for other attributes were assessed using panel latent class model.

Results: A total of 107 patients were consecutively included, of whom 100 (93%) responded between August 2018 and October 2020. Regardless of the attribute levels, 28 patients preferred active surveillance and 28 patients preferred standard esophagectomy. When considering both treatments, five-year survival and long-term HRQOL were considered most important attributes. Patients were willing to trade-off 5.4% five-year overall survival to obtain a better long-term HRQOL.

Conclusion: At least one year after neoadjuvant chemoradiotherapy and esophagectomy, over a quarter of patients would choose not to undergo standard esophagectomy again, regardless of the attribute levels. Patients were willing to trade-off five-year survival chance in order to achieve an HRQOL which was much better than their own situation. When considering both treatments, five-year survival and long-term HRQOL were the most important determinants in the choice for treatment.

794 DOES TRACHEOSTOMY PREDISPOSE GASTROESOPHAGEAL REFLUX?

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Lung diseases have a strong relationship with gastroesophageal reflux disease (GERD). It has been previously demonstrated that conditions such as tracheal stenosis, asthma and even lung transplantation may worsen with reflux and these patients have few symptoms of GERD. With the COVID-19 pandemic, the number of people who needed mechanical ventilation and tracheostomy increased. Our objective was to demonstrate the prevalence of gastro-oesophageal reflux in patients with tracheostomy and describe its characteristics.

Methods: Esophageal manometry and 24 h pH-metry was performed in 137 consecutive patients with a tracheostomy already in a chronic phase, independent of symptoms. Inquire on respiratory and digestive symptoms was also carried out at the time of the examination. Prevalence of gastroesophageal reflux was identified in this population and description of the groups with reflux and without it, as well as comparison between them.

Results: Of the 137 patients, 49 were male, the average age was 40.94 ± 17.3 and the body mass index was 26.3 ± 4.85. The prevalence of gastroesophageal reflux was 45.2%. Baseline characteristics were similar between the groups with and without reflux. In the reflux group, the mean DeMeester score was 36.5 ± 20.8 and the presence of lower sphincter hypotonia was found in only 31% of the patients and was not correlated with reflux between the groups ($p = 0.285$). Regarding the symptoms, 48% had heartburn symptoms and only 30% had a combination of typical symptoms (heartburn + regurgitation).

Conclusion: The presence of tracheostomy is related to an increased prevalence of reflux, even without typical symptoms most of the time. The mechanism for this is still unknown, perhaps the altered respiratory dynamics has a role. These patients should be investigated with functional exams if they develop any condition that may be affected by reflux.

796 OUTCOMES OF DELAYED SURGERY IN PATIENTS WITH RESIDUAL DISEASE AFTER NEOADJUVANT CHEMORADIOTHERAPY FOR OESOPHAGEAL CANCER

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Standard treatment for locally advanced oesophageal cancer is neoadjuvant chemoradiotherapy (nCRT), plus surgery 6-8 weeks later. Time to surgery (TTS) after nCRT seems safe up to 12 weeks, and possibly improves patient condition and pathological response. However, it is unknown whether prolonged TTS is safe in patients with residual disease. The aim of this study was to investigate whether prolonged TTS leads to inferior surgical outcomes and survival in patients with residual disease after nCRT.

Methods: Patients with pathologically confirmed residual disease 4-6 weeks after nCRT who underwent preoperative PET/CT and surgery were selected from the preSANO-trial and SANO-trial. Patients were stratified by TTS $\leq$12 weeks versus TTS >12 weeks after completion of nCRT. Primary endpoint was overall survival (OS). Secondary endpoints were progression-free survival (PFS), peroperative unresectability, microscopically radical resections (R0), tumour regression grade (TRG), postoperative complications and risk of distant dissemination. Effects of TTS on OS, PFS and distant dissemination were analysed with Cox regression, adjusted for Charlson comorbidity index (CCI) at baseline, as well as WHO performance score and weight loss after nCRT.

Results: Forty-two patients were included in the TTS >12 weeks and 132 patients in the TTS $\leq$12 weeks group. Median follow-up was 20.6 months (IQR 16.1-30.3). Adjusted hazard ratios for OS and PFS were 0.50 (95% CI: 0.24-1.02) and 0.47 (95% CI: 0.25-0.91), respectively, in favour of TTS >12 weeks. Patients with TTS >12 weeks had more postoperative complications (89% vs 72%, $p = 0.049$), but comparable peroperatively unresectable tumours (11.9% vs. 3.8%, $p = 0.11$), R0-resections (89% vs 87%, $p = 0.89$), and TRG-scores ($p = 0.97$) compared to patients with TTS $\leq$12 weeks. Patients with TTS >12 weeks showed less distant dissemination (HR 0.40, 95% CI: 0.18-0.88).

Conclusion: Prolonged TTS beyond 12 weeks in patients with clinically proven residual disease after nCRT did not have a negative effect on OS and on PFS, but was correlated with an increase in postoperative complications. The (non-significantly) better survival outcomes for TTS >12 weeks may be explained by the fact that patients had a lower risk of developing distant dissemination, which may reflect improved selection prior to surgery.

800 ASSOCIATION OF MULTIPLE RAPID SWALLOW PARAMETERS WITH SYMPTOMS IN PATIENTS WITH INEFFECTIVE AND NORMAL ESOPHAGEAL MOTILITY

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Multiple rapid swallows (MRS) is a provocative test to assess inhibitory swallowing mechanisms and esophageal peristaltic reserve. MRS response has been purposed to predict post-fundoplication dysphagia and has been associated with increased acid exposure time. Recently it was added to the Chicago classification v 4.0 protocol as an adjunctive test. This study aimed to understand the association of MRS parameters with symptoms in patients within ineffective (IEM) or normal esophageal motility (NEM).

Methods: After IRB approval, a prospectively maintained esophageal motility database was retrospectively reviewed to identify patients with IEM and NEM who also had an MRS evaluation. Patients with previous gastroesophageal surgery, manometric hiatal hernia, or a diagnosed motility disorder (except IEM) were excluded. Patient-reported symptoms (0–4) (heartburn, regurgitation, dysphagia, and chest pain) were grouped by score: 0, 1–2, or 3–4. We compared the prevalence of normal or abnormal MRS and individual MRS parameters (distal contractile integral [DCI], integrated relaxation pressure, distal latency, adequate inhibition, and post-MRS DCI/mean single swallow DCI ratio) with patient-reported symptoms.

Results: From 2019–2020, a total of 531 patients (254 = IEM, 277 = NEM) met the inclusion criteria and formed the study cohort. The presence of normal or abnormal MRS results was not associated with any patient-reported symptom in either the NEM or IEM group. Furthermore, patient-reported symptoms were not associated with individual MRS parameters in either group.

Conclusion: In patients with IEM and NEM, adjunct assessment with MRS does not correlate with patient-reported symptoms. Further studies are needed to assess the role of MRS as an adjunctive test during routine manometry.