control group and also compared with the OTT findings for OGJ obstruction (>1.64 mins) which were previously published.[2]

All patient selected in this study had essentially normal endoscopy and radiology that could not explain patients' dysphagia.

Results Total of 76 patients were selected (F:M=49:27, aged 20–77 years old) and 51.3% (39/76) were complaining of dysphagia.

The 5%-95% confidence interval of OTT was significantly higher in the patient group compared to the control group (1.89 – 3.91 mins vs 0.32 - 0.41 mins, p<0.0001). The OTT in all 39/39 dysphagia patents exceeded the 95% of normal range (0.41 mins) and 59% (23/39) of dysphagia patients had OTT exceeding 1.64 mins which is comparable to the diagnosis of OGJ obstruction.[2]

Conclusion This study demonstrated MIIT testing to be a valuable complementary tool to assess patients' OTT and was able to explain patients' dysphagia. Majority of the dysphagia patients demonstrated OTT compatible to that of OGJ obstruction diagnsosis.

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P336   **MULTICHANNEL INTRALUMINAL IMPEDANCE TRANSIT IN PATIENTS WITH OBSTRUCTIVE DISORDERS**

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Introduction We previously showed multichannel intraluminal impedance transit (MIIT) can be performed during a 24-hrour pH-impedance monitoring to assess the oesophageal transit.[1] The oesophageal transit in patients' was not always assessed during the patient's fasting period to determine critical cutoff thresholds between normal and poor oesophageal transit. The current investigates the topic question.

Method Patients were selected between January 2018 and December 2019 who underwent two investigations in their fasting period:

i. High-resolution manometry (HRM) with Chicago Classification diagnosis.[1]
ii. MIIT assessment with 200 ml of saline[2]

Based on [1], patients with normal HRM without dysphagia were grouped into control and dysphagia patients grouped into OGJ outflow obstruction (OGJOO) and achalasia.

Receiver operating curve (ROC) was plot to ascertain critical oesophageal transit time thresholds in normal motility and in patients with OGJOO and achalasia. The likelihood ratio (LR) for critical thresholds was computed and t-test & Fisher exact tests were employed appropriately to assess for statistical significance.

Results Total number of 117 patients were selected (F: M=74:43, age 18–84 years old). There was statistical significant differences in the oesophageal transit time between the control group compared with the OGJOO group (p<0.0001) and when compared with the achalasia group (p<0.0001).

Abstract P336 Table 1 oesophageal transit time (minutes) in control and patients groups

Group	N	Mean [median]	Standard deviation	5%-95%CI	Range
Control	38	0.37 [0.32]	0.14	0.32 – 0.41	0.15–0.78
OGJOO	40	2.53 [2.6]	0.88	2.26 – 2.81	0.73–3.90
Achalasia	42	37.7 [36]	21.12	34.4 – 47.3	5.6–84

Statistical differences were also found OGJOO and achalasia patient groups (p<0.0001). The descriptive statistical data can be found in table 1.

According to the ROC analysis, oesophageal transit time >0.76 mins will differentiate from normal to OGJOO disorder (sensitivity=91.2%-100%, specificity=86.2%-99.9%) (LR=38)(p<0.0001). Oesophageal transit time of >3.9 mins will differentiate from OGJOO to achalasia (sensitivity=91.6%-100%, specificity=86.8%-99.95)(p<0.0001) (LR=40).

Conclusion MIIT can differentiate between normal oesophageal motility and patients with obstructive disorders. Therefore, there is a provision for using this method which is readily available during reflux monitoring.

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P337   **EVALUATING MODERN REFLUX MONITORING METHODS WITH RESPECT TO MEDICAL THERAPY**

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Introduction Multichannel impedance-pH monitoring (ZPM) and Bravo pH monitoring (BPM) are currently the gold-standard methods to objectively diagnose gastro-oesophageal reflux disease (GORD). BPM has shown to increase the diagnostic yield of GORD in patients with oesophageal hypersensitivity on ZPM[1] and in negative ZPM.[2]

This paper addresses the treatment response of GORD when diagnosed by ZPM and BPM methods.

Method This is a cross-sectional parallel study between August 2019 and September 2019 of a patient cohort who underwent ZPM or BPM methods (according to protocols[3]) and were treated with standard proton pump inhibitor (PPI) therapy for GORD diagnosis.[4][5]

Patients scored the severity of their typical reflux symptoms (heartburn [HB], regurgitation [RG] & non-cardiac chest pain [NCCP]) on a visual analogue scale whilst off PPI therapy during the reflux monitoring and again on PPI therapy 4–5 weeks later. This was used to assess for positive treatment response (when symptom severity reduced by ≥50%), symptom eradication and no symptomatic changes. Appropriate χ^2 testing was employed to compare treatment response between reflux methods.

Results Total of 112 patients were selected based on ZPM-GORD diagnosis (F:M=40:29, age=24–79 years) and BPM-GORD diagnosis (F:M=32:11, age=23–76 years).

Overall 59/69 patients on ZPM-GORD diagnosis had positive treatment response and 20/43 patients with BPM-GORD had positive treatment response (p<0.0001). Patients' with ZPM-GORD diagnosis also showed positive treatment response for HB (81.8% vs 36.5%, p<0.0001), RG (82.0% vs 36.6%, p<0.0001) and NCCP (82.8% vs 23.0%, p=0.0004).

Complete resolution of all reflux symptoms was found in 10/69 patients from ZPM-GORD diagnosis and 2/43 patients on the BPM-GORD diagnosis (p=0.0500). When assessing each symptom, patients with ZPM-GORD diagnosis showed significantly higher prevalence in the eradication of HB (22.7% vs 5.1%, p=0.0182). Conversely patients with BPM-GORD diagnosis showed higher prevalence of no symptomatic changes in HB (4.5% vs 15.4%, p=0.0276), RG (6.1% vs 32.45, p=0.0002) and NCCP (10.3% vs 30.85, p=0.0503) during PPI therapy

Conclusion The findings of this study showed that ZPM based GORD diagnosis to have higher therapeutic yield to standard PPI therapy.

We recommend ZPM to be the first choice for reflux monitoring assessment and utilising BPM as complementary testing for reflux.

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P338 | ASSESSING OESOPHAGEAL CLEARANCE IN POST PERORAL ENDOSCOPIC MYOTOMY: INTRODUCING A NOVEL TECHNIQUE

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Introduction The novel technique to assess the oesophageal clearance using multichannel Iintraluminal impedance transit (MIIT) technique seems promising[1] which has not been utilised in postsurgical outcomes. This study investigates the clinical usefulness of this novel technique in patients undergone peroral endoscopic myotomy (POEM) with respect to treatment outcome.

Method Patients were selected between January 2018 and December 2019 who had POEM procedure for achalasia and a post-POEM MIIT assessment.

Patients gauged their severity of their dysphagia prior to POEM and again at the post POEM MIT assessment day using visual analogue scale. A reduction in dysphagia severity by ≥50% was considered a successful POEM which was also satisfactory outcome to patients. Statistical *t*-test, Fisher Exact tests and odd ratio (OR) were employed to assess for significant difference between treatment outcomes of POEM. A receiver operating curve (ROC) was used to assess the cut-off of oesophageal transit with respect to POEM treatment outcome.

Results Total of 45 patients were selected (F:M=16:29, aged=25–76 years). 20/45 patients had a successful POEM and their IRPs were significantly lower than patients with failed POEM (5.7 mmHg vs 10.6 mmHg, p=0.0093).

The Oesophageal transit time was also significantly reduced in the successful POEM outcome cohort of patients (5.3 mins vs 78.8 mins, p=0.0002). The ROC revealed that oesophageal transit time of <10 mins was satisfactory outcome for successful POEM (sensitivity =81.3%, specificity =93.1%) (Youden's J index=0.74)(area under curve coverage 94%)(OR=54, p<0.0001).

Conclusion This novel technique successfully correlated with oesophageal clearance transit with respect to the POEM outcome and may be a suitable post-surgical assessment.

Preliminary testing indicate oesophageal clearance within 10 minutes is satisfactory response to patients and thus would be considered successful POEM. This initial study is limited by small sample size.

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P339 | NOVEL APPROACH TO ASSESS RETENTION IN DYSPHAGIA PATIENTS WITH POST ANTI-REFLUX SURGERY

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Introduction There are no high-resolution manometry (HRM) classification guidelines to assess patients' dysphagia occurring post anti-reflux surgery. In this study we will explore the use of multichannel intraluminal impedance transit (MIIT) to explain patients' post-surgical dysphagia.

Method Subjects were selected between January 2018 and December 2019 who underwent HRM with normal motility findings[1] followed by MIIT study.[2]

Subjects were grouped into (i) patients asymptomatic of dysphagia with treatment-naïve oesophagus (control group) and (ii) patients with dysphagia and intact post antireflux operation (patient group).

The oesophageal transit times in the patient group was compared with the control group and then compared with the oesophageal transit observed in OGJ obstruction (>1.64 mins) that was previously published.[2]

Results Total of 59 subjects were selected (F:M=38:21, aged 20–75 years old). 32.2% (19/59) were post-surgical patients complaining of dysphagia (15 Nissen fundoplication and 4 LINX procedure) (these patients had mean integral relaxation pressure of 12.4 mmHg).

The 5%-95% confidence interval in oesophageal transit time demonstrated in the patient group and control group were respectively 2.57 – 12.06 mins and 0.32 - 0.41 mins (p=0.0051). The oesophageal transit time in 63.2% (12/19) patients exceeded 1.64 mins which is consistent with oesophageal transit time found in OGJ obstruction.

Conclusion This novel MIIT technique may explain patients' post-surgical dysphagia which HRM failed to capture. Notably, the majority of patients actually show oesophageal transit time comparable to OGJ obstruction who may benefit from dilatation or BoTox.

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