(46.3%; 95% CI, 30.7–62.6%) than SGB (17.1%; 95% CI, 7.2–32.1%; $P = 0.012$). SGB was not associated with a positive reflux-symptom association for heartburn or regurgitation ($P > 0.05$), but the presence of SIBO was associated with a positive reflux-symptom association for regurgitation ($P = 0.004$). Patients with a positive reflux-symptom association for regurgitation had significantly more hydrogen production on LBT than those without (mean AUC 275.8 ppm vs 139.1 ppm; $P = 0.028$).

Conclusions A larger proportion of reflux patients with excessive belching have SIBO compared to SGB. Therefore, SIBO may be the primary cause of belching in GERD. In addition, SIBO was associated with a positive reflux-symptom association for regurgitation and hydrogen production on LBT was significantly greater in these patients. It may be that excessive bacterial fermentation in the proximal gut contributes to reflux symptoms, but further studies are required to look at the relationship between SIBO and GERD.

P234 COMPARING THE ENDOROTOR® RESECTION DEVICE WITH CONTINUED ABLATION IN TREATMENT OF REFRACTORY BARRETT'S OESOPHAGUS

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Introduction Endoscopic ablation therapy is recommended in patients with flat dysplastic Barrett's oesophagus (BE). A proportion will be refractory to treatment. This is associated with neoplasia recurrence. The EndoRotor® device (Interscope Medical Inc, Whitinsville, MA, USA) is a non-thermal resection device. The aim was to compare the safety and efficacy of EndoRotor with ablation in the treatment of refractory BE.

Methods This is an on-going prospective, randomised trial in two centres in the UK and USA. Patients with refractory BE were randomised to EndoRotor resection or continued ablation (Cryotherapy/Radiofrequency ablation). All patients had Intramucosal adenocarcinoma/High grade or Low-grade dysplasia at initial baseline histology. Patients were followed up every 3 months with a maximum of 3 treatments. Primary outcome was BE length reduction. Secondary outcomes included pain post procedure (pain scores), stricture rates and complications. Refractory disease was defined as the presence of BE after at least 3 sequential sessions of first line ablative endotherapy or less than 50% reduction in BE after two sessions.

Results A total of 11 patients were recruited thusfar. 5 randomised to EndoRotor and 6 to ablation.

In the EndoRotor arm the mean initial BE length was C 1.4 (SD 2.1) and M 3.5 (SD 1.9). Patients had a median number of 5 (IQR, 3–6) previous ablations. Patients had a mean of 2 EndoRotor procedures. The mean BE length post initial treatments is C 1 and M 1.9 thusfar. There were 14 procedures performed. Patients had mild (score =1–4) discomfort post 3/14 procedures. There was no perforations/strictures during follow-up. There was one adverse event where intraprocedural bleeding was treated successfully with bipolar probes.

In the ablation arm the mean baseline initial BE length was C 0.7 (SD =1.2) and M 3.6 (SD 1.9). They had a median number of 4 (IQR, 3–5) previous ablations. They had a mean

Abstract P234 Table 1 Outcomes in the EndoRotor and ablation arm

	EndoRotor arm (N = 5)	Ablation arm (N = 6)
Median no. of previous ablations	5(IQR, 3–6)	4(IQR, 3–5)
Median no. of procedures	2	2
Median follow up time (months)	6(IQR, 3–6)	5(IQR, 3–6)
Median procedure treatment time (Mins)	32(IQR, 16–60)	6(IQR, 5–9)
Mean reduction in BE length (C)(mm)	4	5
Mean reduction in BE length (M) (mm)	16	4

of 2 follow-up ablations. The mean current BE length post treatment is C 0.2 and M 3.2. There were 13 procedures performed. There was one report of mild discomfort post procedure.

Conclusion EndoRotor is safe to use in the treatment of refractory BE with no associated strictures and low pain scores. In this cohort of refractory patient's EndoRotor has slightly better outcomes in terms of BE length reduction. This data will be validated with more patients recruited and completed treatment sessions with histology and final BE lengths.

P235 DEVELOPMENT AND VALIDATION OF THE DIRECT OBSERVATION OF BARRETT'S IMAGING/ENDOTHERAPY SKILLS (DOBES) ASSESSMENT TOOLS

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Introduction Endoscopic resection (ER) and radiofrequency ablation (RFA) have become the standard of care worldwide for treatment of early Barrett's neoplasia. Procedural outcomes are highly dependent on the operator skill and training. Validated tools for assessment of competency in these 2 procedures are currently lacking. We aimed to develop and validate ER and RFA tools for use in clinical practice.

Methods A working group of 15 experts who met one or more of the predefined inclusion criteria was set up. Using published evidence-based criteria, the group devised a structured checklist of graded competency descriptors (scores ranged from 1=required maximal supervision to 4=competent). The latter were grouped into four main competency domains, namely: pre-procedural; specific skills; post-procedural; and endoscopic non-technical skills (ENTS). Consensus agreement and piloting was undertaken to ensure content validity.

Construct validity was measured by independent assessment of 60 videos per procedure of ER and RFA by 7 assessors (selected from the working group) in a random manner. Procedures were performed by 15 operators with variable expertise including experts and trainees. Statistical analysis was performed using Generalizability theory, which analysed 'variability components' between: operators; cases; assessors; assessors across (x) operators; and unexplained variation.

Abstract P235 Table 1 Variability components in assessment of construct validity of assessment tools using Generalizability theory

Component	ER		RFA	
	Variance Component	% Variance	Variance Component	% Variance
Operators (Vo)	1.1 x10 ⁻¹⁷	<0.1%	5.7 x10 ⁻¹⁴	<0.1%
Cases (Vc:o)	0.282	45.0%	0.109	31.5%
Assessors (Va)	0.052	8.3%	0.031	9.0%
Assessors x operators (Vo:a)	0.055	8.7%	(*)	(*)
Unexplained (Vca:o)	0.239	38.0%	0.206	59.5%

(*) Unable to calculate due to model fitting problems

Results Data on a minimum of 45 videos per procedure were available for analysis. The mean ($\pm$ standard deviation) competency scores were 3.4 (0.8) and 3.7 (0.6) for ER and RFA, respectively. The variability components for the analysis are detailed in table 1. Variation in scores between operators, assessors, and assessors across different operators was small accounting for <10% of the total variation suggesting good reliability. The majority of variance was explained by variation in cases or unexplained.

Conclusions The DOBES assessment tools for ER and RFA appear to have good content and construct validity and were produced based on evidence and expert opinion. The analysis shows agreement on scores between expert assessors which strengthens the case for its adoption into clinical practice.

P236 ODYNOPHAGIA – IS IT A SYMPTOM WORTHY OF URGENT GASTROSCOPY?

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Introduction Odynophagia is defined as a painful sensation in the oesophageal region that occurs in relation to swallowing. Endoscopy is the gold standard investigation for the diagnosis of mucosal lesions in the oesophagus. Unlike dysphagia, which has historically been an alarm symptom of oesophageal cancer, odynophagia does not form part of the suspected upper gastrointestinal (GI) cancer referral in the UK.

Methods We aimed to compare the cancer detection rate of odynophagia to the standard 'red flag' indications for gastroscopy. We performed a retrospective analysis of all patients who underwent upper GI endoscopy for upper GI 'two-week-wait' (2WW) criteria and compared this with odynophagia over a 14-year period (2005–2019) at a tertiary London-based hospital Trust. Data was obtained from the Unisoft Endoscopy reporting software. The findings at endoscopy for all indications were scrutinised.

Results During the study period, a malignant oesophageal tumour was identified in 21 patients (4%) endoscoped for odynophagia (total 530 patients endoscoped for odynophagia). This compared to Anaemia (17936 endoscoped and 94 tumours identified (0.5%)); Dysphagia (10954 endoscoped and 562 tumours identified (5%)); Nausea and vomiting (N&V) (6380 endoscoped and 64 tumour identified (1%)); Weight loss (6157 endoscoped and 119 tumours identified (2%)).

Abstract P236 Table 1 Indication for gastroscopy and percentage of cancers detected

Indication for gastroscopy	Number of endoscopies	Malignant tumour identified (%)
Odynophagia	530	4
Dysphagia	10954	5
Anaemia	17936	0.5
Nausea/Vomiting	6380	1
Weight loss	6157	2

Of the 530 patients who were endoscoped for odynophagia during the study period, 240 (45%) had oesophageal mucosal lesions: Reflux oesophagitis 193 (36%); Barrett's oesophagus (26 (5%)); Malignant tumour 21 (4%). 32 (6%) had an oesophageal stricture.

Conclusion From this study, almost half of patients endoscoped for odynophagia have a positive endoscopic mucosal abnormality. 4% of patients endoscoped for odynophagia had oesophageal cancer compared with 5% of dysphagia patients. Anaemia (0.5%), weight loss (2%) and N&V (1%) all have inferior cancer pick up rates. We recommend that odynophagia be re-classified as an 'alarm symptom' and those presenting with this significant symptom undergo an urgent upper GI endoscopy to define the exact mucosal abnormality and exclude oesophageal cancer.

P237 ACCURACY OF THE PPI TEST FOR REFLUX DISEASE DIAGNOSIS: COMPARISON WITH WIRELESS PH STUDY DATA

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Introduction Proton pump inhibitors (PPIs) are widely prescribed for gastro-oesophageal reflux disease (GORD) symptoms. The 'PPI test' is frequently used in lieu of formal testing. It has been shown previously that, with 48 hr pH monitoring, a 2-week PPI trial has limited accuracy for GERD diagnosis. However, it is possible that restricting to 48 hrs pH monitoring could 'miss' true GERD diagnoses, and a 2-week PPI trial may not be long enough for adequate symptom relief. We aimed to assess the accuracy of response to an 8-week PPI trial in diagnosis of GERD when using 96 hr pH monitoring as gold standard.

Methods We first established 96 hr normal values in a cohort of 47 asymptomatic healthy volunteers (age 28.2 $\pm$ 8.9 years, 65.9% F). Upper limits of normal were defined as 95th percentile values for mean total acid exposure, worst day acid exposure, and mean DeMeester score. We studied 86 patients (age 48.4 $\pm$ 13. years, 71.7% F) for testing of troublesome heartburn symptoms. All patients completed a RESQ-7 questionnaire off PPI, then had wireless pH capsule investigation for 96 hrs. Total acid exposure%, worst day acid exposure% and mean DeMeester score were recorded and compared to our normal values. After completion of the investigation all patients started PPI, at least standard dose, for 8 weeks. At 8 weeks the RESQ-7 was repeated. Percentage improvement in