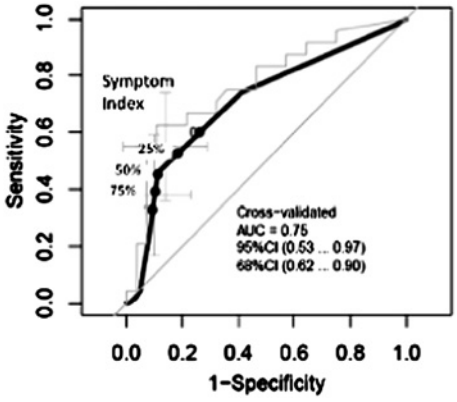
Methods HVs and patients with reflux symptoms entered a prospective trial. Quality of life (RAND-36) and symptom severity (Eraflux) was assessed on and off PPI and after 2 weeks ×2/day PPI. Endoscopy recorded mucosal disease. Wireless pH system (Bravo®, Given Imaging) measured acid reflux and symptoms up to 4 days. Receiver Operating Curve (ROC) assessed prediction of PPI response. For each prediction 80% of patients were randomly selected as training set, remaining 20% constituted test set. This was repeated 200 times producing average ROC with SEs. Area under Curve (AUC) quantified quality of prediction.

Results Complete data were available from 25/33 HVs (18F, age 20–56) and 70/108 patients (31F, age 18–77), >320 days in total. Oesophagitis was present in 9 HVs (32%: Grade A) and 26 patients (33%: Grade A=19, B=2, C-D=5). Acid exposure time was elevated (AET >5.6%) in 3 (12%) HVs and 35 (50%) patients. Eraflux off-PPI was >25 (consistent with GERD) in 60/63 patients and fell by mean 7 (95% CI 5 to 10) on PPI, 46% reported positive response (>3 fall). Diagnosis: Endoscopy, AET and reflux-symptom association analysis (Symptom Index (SI)) did not discriminate health/disease; but reflux-associated symptoms/day (nRS/Day) covered different ranges for HV and patients. Logistic regression with bootstrap validation identified that ≥3 RS/day corresponded to ~50% probability that participant was a patient.

PPI response: Clinical parameters and AET did not predict outcome. SI (9.2 vs 30.2, p=0.0023) and nRS/Day (1 vs 2.6, p=0.012) were higher in responders. RAND-36 scores for poor physical role and pain were higher in non-responders (p~0.1). SI ROC had an AUC of 0.73 (CI 0.51 to 0.92). SI >25 was the optimal cut-off for identifying PPI responders (Abstract PTU-197 figure 1). Prediction quality from 24 h studies was lower (AUC 0.69) and CIs for all parameters were wider with lower CI.



SI	sens	spec
0.00	1.00	0.00
5.56	0.92	0.32
11.11	0.80	0.54
16.67	0.71	0.68
22.22	0.62	0.81
27.78	0.62	0.88
33.33	0.44	0.93
38.89	0.28	0.93
44.44	0.25	0.93
50.00	0.21	0.93

Abstract PTU-197 Figure 1 ROC for SI as predictor of PPI response. Error bars show SE. ROC with cross-validation is black line, without cross-validation is grey line (~10% greater AUC).

Conclusion Diagnostic consistency for all parameters increases with study duration. A simple count of nRS/Day best discriminates HVs from patients on pH studies. SI >25 provides single best prediction of PPI response; but quality of predictions was modest in this population with low PPI response.

Competing interests None declared.

PTU-198 TOWARDS OBJECTIVE ENDOSCOPIC DIAGNOSIS OF EARLY BARRETT'S NEOPLASIA USING FIBRE-OPTIC RAMAN SPECTROSCOPY

doi:10.1136/gutjnl-2012-302514c.198

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Introduction Raman spectroscopy is a powerful analytical technique that can rapidly and accurately identify biochemical changes in cells that have become neoplastic. We are aiming to translate this laboratory technique into an endoscopic tool that can identify high-grade dysplasia (HGD) and early malignant change (T1a, T1sm1) within Barrett's oesophagus. Here we aim to demonstrate that a novel fibre-optic Raman probe can correctly classify the pathology of ex vivo oesophageal tissue.

Methods A custom-built Raman probe, designed to fit through the instrument channel of a standard endoscope, was used to measure Raman spectra from ex vivo oesophageal tissue following oesophagectomy, endoscopic resection, or point biopsy from patients with Barrett's oesophagus +/- neoplasia. 1s spectra were measured using a monochromatic 830 nm laser for excitation. Multivariate analysis was used to correlate Raman spectra with histopathological diagnosis and calculate probe accuracy.

Results 348 spectra were measured from ex vivo tissue from 28 patients. Fibre-optic Raman measurements were able to discriminate between HGD/adenocarcinoma and non-dysplastic Barrett's oesophagus (BO) with a sensitivity of 91% and specificity of 96%.

Conclusion Fibre-optic Raman Spectroscopy could enable endoscopic targeting of early neoplastic lesions in the oesophagus facilitating potentially curative endoscopic resection. Preparation is underway for an in vivo pilot study.

Competing interests None declared.

PTU-199 VARIABLE REPORTING AND DIAGNOSIS OF EOSINOPHILIC OESOPHAGITIS ACROSS THE UK: DATA FROM THE BSG NATIONAL DISEASE REGISTER

doi:10.1136/gutjnl-2012-302514c.199

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Introduction Eosinophilic oesophagitis (EoE), a disorder characterised by intermittent dysphagia, was first described over 20 years ago. The true prevalence of this condition is not known. In 2010, the British Society of Gastroenterology (BSG) established a National EoE Register. The aim was to determine the frequency and pattern of diagnosis in the UK, and to identify centres for future research and areas where few patients are diagnosed and hence educational input may be beneficial. We report the data collected from March 2010 to January 2012.

Methods A web-based register was established under the direction of the Oesophageal section of the BSG. Data entry was voluntary, anonymised, available by open access and did not require membership of the BSG. Clinicians from each hospital entered patient data. The date of birth and first part of patients' postcodes were recorded for demographic purposes and to prevent data duplication. Details of the specialty that made the diagnosis, the duration and pattern of symptoms, the diagnostic criteria and any treatment given were also recorded.

Results Data relating to 315 patients, although incomplete in some cases, were available for analysis. There were 229 patients from five centres and 86 patients from 30 other centres. No patients were entered from 70 hospitals. Their age ranged from 0 to 85 years. There were 236 males (75%) and 77 females (3:1). Symptom duration ranged from 0 to ≥25 years. 249 (79.0%) patients had >15 eosinophils per high power field (eos/hpf), 11 (4%) had <15 eos/hpf with 55 (17%) patients having no eosinophil count recorded. The