

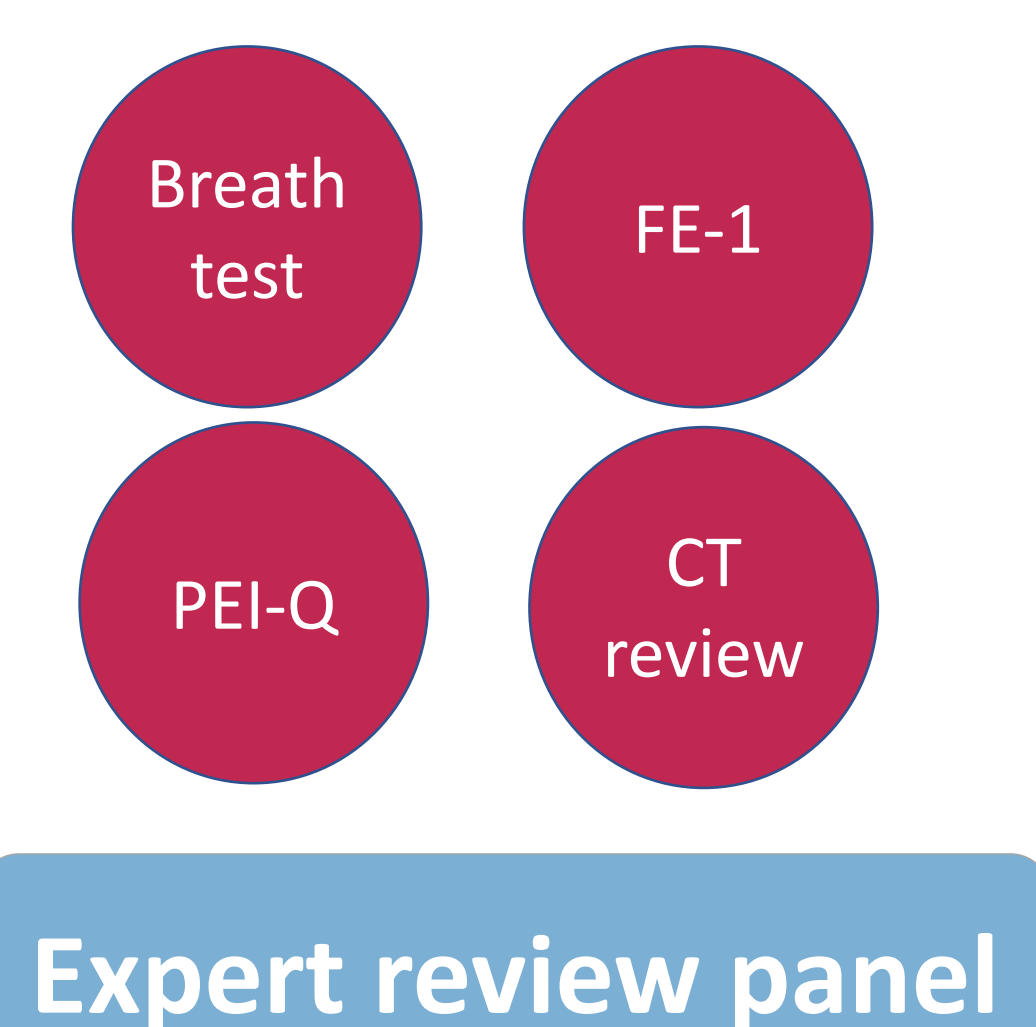
Background

- Correct treatment of PEI with PERT following a pancreatic resection is essential for QOL, clinical outcomes and survival.^(1,2,3)
- However, PEI remains undertreated.⁽⁴⁾
- Diagnosing PEI is challenging which makes quantification of prevalence difficult, especially in the post-operative patient.
- Current literature on incidence reports a wide range.⁽⁵⁾
- This work aims to quantify the rate of PEI in patients following a pancreaticoduodenectomy to support or refute a treat all policy.

Discussion

- No ideal tests exist for PEI, this collation of diagnostic modalities and blinded expert review panel was designed to ascertain the true rate of PEI following pancreatic head resection.
- As this required our cohort to survive a year, travel to our hospital and undergo a period of starvation/PERT hold there is likely to be a recruitment bias towards the fitter, younger patient with less aggressive pathology.
- Despite this over 80% have PEI with over 90% of these being considered moderate or severe.
- Without evidence to support the absence of PEI, patients undergoing pancreatic head resection should be prescribed PERT as standard, with dietetic follow up to ensure correct dosing

Patients 1-2 years post pancreatic head resection for cancer



Consensus decision:
Over 80% have PEI at 1-2 years post pancreatic head resection

Consensus decision:
Over 90% of these are considered moderate or severe

Methods

- As part of The DETECTION Study (Supported by PSGBI and PCUK), patients having undergone a pancreaticoduodenectomy for cancer 1-2 years ago underwent a PEI screen:
 - ¹³CMTGT, FE-1, PEI-Q, post-operative pancreatic duct width (On CT).
- 4 independent assessors with PEI expertise reviewed all results blinded to other decisions to make a dichotomous decision on whether the patient had PEI and if so, what grade.

Results

- **N= 26 recruited.**
- ¹³CMTGT: 73.1% had a cPDR diagnostic for PEI
- FE-1: 85% meeting the criteria for severe or moderate PEI
- PEI-Q: 84.6% reporting a score indicative of PEI
- Consensus decision in 23/26

	N	
Operation	26	
PPPD		20 (76.9%)
PD		6 (23.1%)
Age at Surgery (Years)	26	68.5 (62-73)
Gender (% Male)	26	18 (69.2%)
BMI (kg/m ²)	26	23.2 (20.1-27.1)
Current Smoker	26	2 (7.7%)
Charlson Comorbidity Index	26	
0-3		20 (76.9%)
4-5		5 (19.2%)
6+		1 (3.8%)
¹³ CMTGT (cPDR)	26	28.2 (24.9-29.9)
<=29%		19 (73.1%)
>29%		7 (26.9%)
Faecal elastase	20	92 (18-135)
<100		12 (60%)
100-200		5 (25%)
>200		3 (15)
Post-operative duct width	23	5.5 (3-7)
<4mm		9 (39.1%)
>4mm		14 (60.9%)
PEI-Q mean symptom score	26	1.5 (0.95-1.82)
<0.6 (none)		4 (15.4%)
0.6-1.4 (mild)		6 (23.1%)
1.4-1.8 (moderate)		9 (34.6%)
>1.8 (severe)		7 (26.9%)
PEI Status Y/N	26	
Y		21 (80.8%)
N		5 (19.2%)
PEI Grade (in those with PEI)	21	
Mild		2 (9.5%)
Moderate		6 (28.6%)
Severe		13 (61.9%)

Data are reported as N (%), or as median (interquartile range IQR), PPPD=Pylorus preserving pancreaticoduodenectomy, PD=Pancreaticoduodenectomy, BMI=body mass index, PEI=pancreatic exocrine insufficiency, ¹³CMTGT=¹³C Mixed triglyceride breath test, cPDR=cumulative percent dose recovery, PEI-Q=PEI Questionnaire.

Abbreviations / References

PEI: Pancreatic exocrine insufficiency, ¹³CMTGT: ¹³ Carbon mixed triglyceride breath test, PERT: Pancreatic exocrine replacement therapy, cPDR: cumulative percent dose recovery, IRMS: isotope ratio mass spectrometry, QoL: Quality of life, FE-1: Faecal elastase.

1. Johnson, C.D., et al., *Qualitative Assessment of the Symptoms and Impact of Pancreatic Exocrine Insufficiency (PEI) to Inform the Development of a Patient-Reported Outcome (PRO) Instrument*. Patient, 2017. **10**(5): p. 615-628.
2. Partelli, S., et al., *Faecal elastase-1 is an independent predictor of survival in advanced pancreatic cancer*. Dig Liver Dis, 2012. **44**(11): p. 945-51.
3. Gooden, H.M. and K.J. White, *Pancreatic cancer and supportive care--pancreatic exocrine insufficiency negatively impacts on quality of life*. Support Care Cancer, 2013. **21**(7): p. 1835-41
4. JMIR. Receipt of curative resection or palliative care for hepatopancreaticobiliary tumours (RICOCHET): protocol for a nationwide collaborative observational study. JMIR Res Protoc. 2019;8:e13566.
5. Tseng, D.S., et al., *Pancreatic Exocrine Insufficiency in Patients With Pancreatic or Periampullary Cancer: A Systematic Review*. Pancreas, 2016. **45**(3): p. 325-30