# Presentation

## Endoscopic-ultrasound (EUS)-directed transgastric ERCP (EDGE) procedure for the management of choledocholithiasis following Roux-en-Y gastric bypass

Authors: Al-Asiry, J - Gastroenterology Leeds Teaching Hospitals,Attia, M - Liver Transplant Surgery Leeds Teaching Hospitals,Vijayanand, D - Liver Transplant Surgery Leeds Teaching Hospitals,Everett, SM - Gastroenterology Leeds Teaching Hospitals,Paranandi, B - Gastroenterology Leeds Teaching Hospitals,Huggett, MT - Gastroenterology Leeds Teaching hospital,  
Category: Benign

Aims:  
  
The obesity epidemic and the resultant growth in bariatric surgery have led to a unique problem of managing pancreaticobiliary diseases in patients with altered anatomy, particularly after Roux-en-Y gastric bypass (RYGB). Various techniques including enteroscopy-assisted endoscopic retrograde cholangiopancreatography (ERCP)1 and laparoscopy/laparotomy-assisted ERCP2,3 have been developed to address this problem with varying success. More recently, a novel endoscopic-ultrasound (EUS)-directed transgastric ERCP (EDGE) procedure has been described4. Here we present what the authors believe is the first EDGE procedure performed in the United Kingdom.  
  
  
  
Methods:   
  
A 69-year-old woman who had undergone a RYGB in 2010 presented with a week-long history of right upper quadrant abdominal pain and jaundice. Laboratory tests showed an elevated alkaline phosphatase of 504 U/L and total bilirubin of 59 umol/L. Magnetic resonance cholangiopancreatography demonstrated an obstructing 2.4cm gallstone within the distal common bile duct (CBD). Percutaneous transhepatic cholangiography was performed with insertion of an internal-external drain. Liver function tests improved but there was persistent sepsis with developing multi-organ failure. After discussion of options, including open bile duct exploration, laparoscopic-assisted ERCP, and EUS-directed transgastric ERCP (EDGE), the EDGE procedure was attempted.   
  
  
  
Results:  
  
  
  
The gastric pouch was intubated with an Olympus GF-UCT260 echoendoscope and the excluded stomach identified using EUS. This was punctured with a 19G Boston Expect Flex needle and a 0.025 inch Olympus Visiglide wire passed into the duodenum after distension of the stomach with water and contrast. A 20mm Boston Hot AXIOS system was used to access the excluded stomach and the stent was deployed under EUS and screening guidance. The stent was then dilated to 20mm with a Boston CRE balloon and a duodenoscope was advanced through the stent to D2. The CBD was cannulated via a previous sphincterotomy and the cholangiogram showed a 2cm distal stone. Balloon sphincteroplasty was performed to 15mm. The percutaneous drain was removed and multiple CBD balloon trawls were performed to remove the gallstone and pus. On extubation it was noted that the proximal flange of the AXIOS stent had displaced slightly but it was re-positioned using stent grabbers.   
  
  
  
Conclusion:  
  
The EDGE procedure is a novel approach to an increasingly common problem of performing ERCP in RYGB patients. To the authors knowledge this is the first EDGE procedure to be performed in the UK.

## Quantum: Patient reported outcomes(PROs) after minimal access retroperitoneal pancreatic necrosectomy to treat acute pancreatitis – an exploratory study.

Authors: Piotr Zelga - Cambridge HPB and Transplant Unit Cambridge University Hospitals NHS Foundation Trust,Jonathan Rees - Bristol Centre for Surgical Research University of Bristol - School of Social and Community Medicine,,Edoardo Iaculli - Cambridge HPB and Transplant Cambridge University Hospitals NHS Foundation Trust,Colin Johnson - Southampton General Hospital University Surgical Unit,Asif Jah - Cambridge HPB and Transplant Cambridge University Hospitals NHS Foundation Trust,  
Category: Benign

AIMS: A minimally invasive approach to pancreatic necrosectomy (MIRPN) decreases morbidity and mortality from necrotising acute pancreatitis. However, the impact of MIRPN on patient-reported outcomes is unclear.   
  
METHODS: Patients with acute pancreatitis who underwent MIRPN between January 2010 and December 2016 were identified and invited to participate completing the EORTC QLQ-C30, & EORTC PAN-28(CP) questionnaires. PROs were compared using Pearson and Anova (Significance p<0.01) with an age- and sex-matched normative population of Western Europe and stratified by age and also the duration after MIRPN (<1y,1-3y,>3y). A >15 point change in PRO score was clinically significant.  
  
RESULTS: 52 eligible patients were identified and 46 participated (88%). 74% (n=34) returned questionnaires. After MIRPN all patients reported poorer physical and social functioning scores with a clinically significant (>15point) reduction in those ?50 years old; whilst fatigue, pain and insomnia symptom scales had the highest scores(42,26 and 30 points respectively). Patients<1 year after MIRPN, had similar scores for all functional scales and global HRQL(health-related quality of life) when compared to the normative data. However, with time global HRQOL deteriorated and by three years scores for functioning and symptoms were statistically(p < 0.0001) and clinically(>15 points) worse than age-matched controls.  
  
CONCLUSION: One-year after MIRPN patients report similar/improved HRQL but more fatigue when compared to the population data. However, patients should be informed that HRQL deteriorates with time often due to chronic pancreatitis and pancreatic insufficiency. This study supports the use of MIRPN and prospective studies of HRQL in this setting are indicated.

## Aetiology of Acute Pancreatitis in a Multi-Ethnic Population: A Retrospective Cohort Study.

Authors: Trisha Kanani - Department of Hepatobiliary and Pancreatic Surgery University Hospitals of Leicester NHS Trust,Hina Kanani - Medical School University of Birmingham,John Isherwood - Department of Hepatobiliary and Pancreatic Surgery University Hospitals of Leicester NHS Trust,Wen Chung - Department of Hepatobiliary and Pancreatic Surgery University Hospitals of Leicester NHS Trust,Cristina Pollard - Department of Hepatobiliary and Pancreatic Surgery University Hospitals of Leicester NHS Trust,Eyad Issa - Department of Hepatobiliary and Pancreatic Surgery University Hospitals of Leicester NHS Trust,Pankaj Gupta - Department of Metabolic Medicine & Chemical Pathology University Hospitals of Leicester NHS Trust,Ashley R Dennison - Department of Hepatobiliary and Pancreatic Surgery University Hospitals of Leicester NHS Trust,  
Category: Benign

Aims  
  
  
  
The aim of this study was to investigate the aetiology of acute pancreatitis (AP) amongst patients from different ethnic backgrounds and to study its effect on the in-hospital length of stay (LOS) in a multi-ethnic population cohort.   
  
  
  
Methods  
  
  
  
A retrospective cohort observational study from October 2015 to March 2018, inclusive, was conducted for patients diagnosed with AP in three teaching hospitals. Over the 2.5 years, 1637 admissions were coded for AP. Electronic records were utilised to identify admissions with AP and the most likely cause based on recorded information and radiology reports. The diagnostic criteria for AP were meeting 2 out of the following 3 criteria: pain consistent with the disease, serum amylase more than three times the upper normal limit and CT/MRI evidence of AP. Patients with CT/MRI evidence of chronic pancreatitis were excluded.   
  
  
  
Results  
  
  
  
Over the 30-month period, 976 admissions were deemed to fit the criteria for a diagnosis of AP. For all ethnic groups, the two most common causes of AP were gallstones (432/976, 44%) and alcohol (142/976, 15%). AP episodes for patients from a White background were attributed to gallstones in 339/722 (47%) and alcohol in 96/722 (13%). However, in patients from Indian backgrounds, 38% had gallstone-related AP (59/156) and 18% had alcohol-related AP (29/156). Furthermore, in patients from a Black background, gallstones were the aetiology in 7/16 (44%) and alcohol in 1/16 (6%). In subgroup analysis, alcohol induced AP was more common among patients from Indian origin in comparison to the White subgroup (P <0.05; Chi-squared).   
  
  
  
The median LOS (nights) for all admissions was 5 nights (0 to 306). Patients with alcohol induced AP had shorter in-hospital LOS (median: 4 nights) in comparison to patients with gallstone-related AP (median: 6 nights) (P <0.05; Student t-test). However, in subgroup analysis, ethnicity did not affect the in-hospital LOS.   
  
  
  
Conclusions  
  
  
  
Alcohol induced pancreatitis was more common in the Indian subgroup than White subgroup. However, there was no significant difference in the in-hospital LOS amongst the different ethnic backgrounds.

## Utility of EUS guided tissue sampling with second generation core biopsy needles in the diagnosis of Type 1 autoimmune pancreatitis.

Authors: Kofi Oppong - HPB Unit Newcastle upon Tyne Hospitals NHS Trust,Pardeep Maheshwari - HPB Unit Newcastle upon Tyne Hospitals NHS Trust,Beate Haugk - Department of Cellular Pathology Newcastle upon Tyne Hospitals NHS Trust,John Leeds - HPB Unit Newcastle upon Tyne Hospitals NHS Trust,Matthew Huggett - Department of Gastroenterology Leeds teaching Hospitals NHS Trust,Bharat Paranandi - Department of Gastroenterology Leeds teaching Hospitals NHS Trust,Alison Cairns - Department of Cellular Pathology Leeds teaching Hospitals NHS Trust,Antony Darne - Cellular Pathology Newcastle upon Tyne Hospitals NHS Trust,Manu Nayar - HPB Unit Newcastle upon Tyne Hospitals NHS Trust,  
Category: Benign

Background: EUS fine needle aspiration (FNA) has poor performance in diagnosing autoimmune pancreatitis (AIP) due to sample size and lack of preserved architecture. In mass forming disease a non-diagnostic FNA may result in a presumptive diagnosis of malignancy and unnecessary surgery. Second generation (Fork-tip and Franseen) core biopsy needles have been introduced with the aim of improving tissue yield and maintaining tissue architecture. Literature on their performance in the diagnosis of AIP is limited to a few case reports.   
  
Aim: To assess the diagnostic performance of EUS tissue sampling and 2nd generation core biopsy needles in particular in the diagnosis of type 1 AIP.  
  
Methods: Retrospective study of patients with a final diagnosis of type 1 AIP in 2 tertiary centres who underwent EUS guided tissue sampling during workup. Histology reports were reviewed and classified as per International consensus diagnostic criteria (ICDC); Level 1 (highly suggestive) requires the presence of 3 or all 4 histological features and level 2 (probable) requires 2 features.   
  
Results: Between March 2006 and September 2018, 44 procedures were performed on 37 individuals (38 lesions) with a final diagnosis of Type 1 AIP. 33 procedures were for a mass lesion and or biliary obstruction. Mean age 61 (range 31-82) 28 male, 9 female. There were 11 FNA, 7 reverse bevel, 7 Franseen and 19 Fork tip procedures. There were 6 inadequate samples (3 FNA, 2 reverse bevel and 1 Fork-tip).Of the 38 adequate samples, 18 (47.3%) met ICDC criteria for diagnosis of AIP (15 level 1 and 3 level 2). 0/13 FNA or reverse bevel samples were diagnostic compared to 18/25 (72%) 2nd generation needle samples (p=0.0001). Obliterative phlebitis was identified in 50% of Fork-tip samples but none of the Franseen samples. Overall there was no significant difference between Franseen 4/7 (57%) and Fork-tip 14/18(77.7%) needles (p=0.35). However, if analysis was performed accepting only level 1 criteria there was a significant difference 14/18 (77.7%) vs 1/7 (14.2%); p=0.007.  
  
Conclusion  
  
In this the largest study to date of 2nd generation core biopsy needles in the diagnosis of AIP they proved superior to FNA and reverse bevel needles in. The fork tip needle demonstrated good (77.7%) and the Franseen needle modest (57%) overall performance. There was a significant difference in the proportion of level 1 diagnosis between the 2 needles favouring the fork-tip needle. This study supports the preferential use of these needles in suspected type 1 AIP.

## ARE WE MISSING CASES OF PANCREATIC EXOCRINE INSUFFICIENCY IN PATIENTS ADMITTED TO HOSPITAL WITH ALCOHOL RELATED PROBLEMS?

Authors: Mustafa Jalal - Gastroenterology Royal Hallamshire Hospital,  
Category: Benign

Aims: We aim to study the current practice and yield of pancreatic exocrine insufficiency (PEI) in patients with high alcohol intake tested with faecal elastase-1 (FEL-1). We secondly aim to identify positive and negative predictive factors and improve the testing yield. High alcohol intake is an established risk factor for PEI and chronic pancreatitis.   
  
  
  
Methodology: We prospectively identified patients admitted to hospital with alcohol related problems and tested with FEL-1. In addition to demographic information, data were collected from medical records included BMI, alcohol intake per week, Pack-Year smoking history, haemoglobin, platelet, albumin, bilirubin, alkaline phosphatase, alanine-transferase, C-reactive protein, B12, folate, ferritin, calcium, magnesium and phosphate levels. FEL-1 <200 µg/g indicates PEI.  
  
  
  
Results: A total of thirty patients with high alcohol intake and tested with FEL-1 were identified (20 male, mean age 47.7 ±11.45). Mean alcohol intake per week was 152.01 ± 87.8 units. PEI was identified in 20% (6/30) with FEL-1 level <200 µg/g. Twenty-four patients had FEL-1 > 200 µg/g, (14/30) had FEL-1 200-500 µg/g and (10/30) had FEL-1 >500 µg/g. BMI in patients with low FEL-1 was higher compared to FEL-1 > 500 (31.34 kg/m2 vs 25.7 kg/m2). Patient with low FEL-1 had higher pack year smoking history compared to FEL-> 500 (16.46 vs 11.84). Albumin and magnesium levels were below normal in low FEL-1compared to FEL-1 > 500 group (32.3 g/L vs 39.7 g/L, p=0.0824) and (0.67 mmol/L vs 0.71 mmol/L, p=0.5420), respectively. Mean Phosphate level was statistically significant between FEL-1 <200 and FEL> 500 (0.87 mmol/L vs 1.29 mmol/L, p=0.0236)   
  
  
  
Conclusions: The rate of PEI in patients with high alcohol intake in our cohort is 20%. Our patients were screened during their admission to hospital with alcohol related diseases. Gastrointestinal symptoms or weight loss were not the predominant problems. Interestingly, PEI patients were obese suggesting that a single measure of BMI is insufficient to screen for malnutrition in these patients. We recommend screening patients admitted to hospital with high alcohol intake because one in 5 may have PEI, in particular those who has history of smoking, high BMI and low albumin and electrolyte disturbances. A Larger size study is required to validate our results.

## Management of pancreatic fluid collections within the Northern Region Remote Care Pancreatitis service

Authors: Noor Bekkali - Gastroenterology and HPB medicine Freeman Hospital,David Bourne - Nutrition Freeman Hospital,Richard Charnley - HPB surgery Freeman Hospital,Jeremy French - HPB surgery Freeman Hospital,John Leeds - Gastroenterology and HPB medicine Freeman Hospital,Kofi Oppong - Gastroenterology and HPB medicine Freeman Hospital,Jennifer Logue - HPB surgery Freeman Hospital,Manu Nayar - Gastroenterology and HPB medicine Freeman Hospital,  
Category: Benign

Background & Aim  
  
Severe acute pancreatitis is a condition with high mortality and requires intervention in 40% of the patients. NCEPOD recommends that this is best managed in a multidisciplinary team with access to specialist regional services as and when required. We report our experience of the management of pancreatic fluid collections (PFC) within the region’s first remote care pancreatitis network.   
  
Methods  
  
All available data on patients with severe pancreatitis who were transferred between June 2015 - July 2017 were analysed. The network was formally established in 2015 and serves a population of 3.5 million and 17 referring hospitals. All patients were discussed in the multidisciplinary meeting and only patients requiring specialist input were transferred. Baseline characteristics, aetiology, nutritional support, antibiotic treatment, intensive care unit (ITU) stay, interventions, complications, mortality and follow up of at least one year were reported.  
  
Results   
  
285 patients were referred during this period. 83/285 (29%; 46 male) were transferred with a mean age 56 years [range 18-85]. The commonest aetiology was: 37 (45%) gall stones and 26 (31%) alcohol. The main reason for transfer was drainage of peripancreatic collectionsin 76 (91%). Patients were referred after a mean of 13.7 [1-188] days from admission locally; 26% were admitted directly to ITU. Patients were transferred 4.5 [0-16] days post-MDT discussion. Fifty-five (66%) received antibiotics; however only 17 (20%) had appropriate antibiotics based on positive blood cultures. Appropriate feeding was 98%; 70 (84%) patients were enterally fed and 12 received parenteral nutrition (PN). One patient had inappropriate PN.   
  
21% patients had intervention prior to transfer. On transfer, 15/83(18%) did not require intervention as there was spontaneous resolution of the collections. In the remaining patients the interventions included: endoscopic drainage only = 48%, percutaneous only = 29%, endoscopic + percutaneous = 12% & others = 5%.   
  
35%(29/83) had multiorgan failure. 31/83 (37%) had complications following intervention. These were: sepsis = 35%, bleeding = 39%, thromboembolic events = 16% & others = 10%. Twelve (14%) patients died, 10 had MOF and 2 had pulmonary embolism, of which 11 were in ITU. Mean follow up was 18.2 months (range = 14 – 35).  
  
Conclusions  
  
Majority of patients (82%) required intervention for treatment of PFCs. Endoscopic drainage was the commonest route of drainage. Inappropriate antibiotic use remains a concern however nutritional support was adequate in majority of the patients. The results confirm the role of regional networking in patients with acute severe pancreatitis.

## A cross-sectional study to justify and inform a future randomised controlled trial of metformin versus placebo to improve overall survival in patients with inoperable pancreatic cancer.

Authors: Philip Broadhurst - Norwich Medical School University of East Anglia,Andrew Hart - Norwich Medical School University of East Anglia,  
Category: Malignant

AIMS  
  
  
  
Metformin has biological anti-cancer properties against pancreatic adenocarcinoma (PDAC) cells demonstrated in laboratory experiments. These actions require metformin acting indirectly through the liver, so patients with no hepatic metastases may benefit most. Phase II proof of concept studies are now needed to justify future phase III RCTs of metformin investigating overall survival in PDAC. The aim of this work was to address, for the first time, many feasibility questions before such trials can progress.  
  
  
  
METHODS  
  
  
  
A cross-sectional observational study reviewed the medical notes of patients with PDAC treated at the Norfolk and Norwich University Hospital, diagnosed between 1st January 2015 and 31st December 2016. Information on eligibility for a trial (no current metformin use, no/few hepatic metastases) and variables affecting metformin plasma levels (prescribed other drugs namely proton pump inhibitors (PPIs)) and patient tolerance of the investigational medicinal product (prevalence of nausea and vomiting) were collected. Descriptive statistics namely, means and percentages, were used.   
  
  
  
RESULTS  
  
  
  
Of 141 participants, 52% of participants were female and the median age at diagnosis was 70 (range 47-96). 117 (83%) were not prescribed metformin at diagnosis or during follow-up, of which 44% did not have hepatic metastases. PPIs were prescribed in 66% of such patients at and after diagnosis, with nausea and vomiting reported in 63% of non-metformin users. Non-metformin users had more cancers which had metastasised than metformin users (81% vs 63%, p=0.04).   
  
  
  
CONCLUSIONS  
  
  
  
In total, 44% of all inoperable PDAC patients would be eligible for future phase II/III trials of metformin, namely those not prescribed this drug and without hepatic metastases. For many eligible patients prescribed a PPI, alternative anti-acid drugs are required. Nausea and vomiting must be recognised early and managed, so participants can tolerate study drugs in a trial.

## Use of non-steroidal anti-inflammatory drugs (NSAIDs) and the development of pancreatic cancer in a prospective cohort study: The European Prospective Investigation of Cancer (EPIC)

Authors: Sarah Halligan - Norwich Medical School University of East Anglia,  
Category: Malignant

Aims: The aetiology of pancreatic adenocarcinoma (PAC) is largely unknown, although it is plausible aspirin and other NSAIDs may prevent its development. Laboratory studies report that aspirin has anti-carcinogenic properties, however the evidence from epidemiological studies and clinical trials is conflicting. This prospective study investigates the relationship between aspirin/NSAID use and the risk of PAC including, for the first time in a more generalisable population of both men and women and in several potentially high-risk groups.   
  
  
  
Methods: The European Prospective Investigation of Cancer (EPIC)-Norfolk cohort recruited 25 639 men and women aged 45-75 who completed questionnaires at recruitment, on the use of aspirin and NSAIDs. The cohort was followed up for 22 years for the development of PAC. Cox proportional hazard models calculated hazard ratios (HR) for aspirin use and the development of PAC, adjusted for covariates. Sensitivity analyses were conducted according to: gender, age, smoking status, BMI and physical activity.  
  
  
  
Results: 143 cases of PAC were identified (51.7% women), with diagnosis at a mean age of 75.4. For those taking ‘any aspirin’, the adjusted HR was 1.06 (CI 0.57-1.98, p=0.85), and for ‘regular aspirin’ use 1.55 (CI 0.97-2.49, p=0.07). Non-aspirin NSAIDs were not associated with risk 1.13 (CI 0.65-1.97, p=0.66). There were no associations documented in sensitivity analyses, including for smoking.   
  
  
  
Conclusions: The data does not support a chemoprotective effect of aspirin against PAC, including in several high-risk groups, such as smokers.

## Major pancreatic resections in patients aged over 75 years old.

Authors: Vivian Li - Leicester Hepatobiliary Unit University Hospitals of Leicester,John Isherwood - Leicester Hepatobiliary Unit University Hospitals of Leicester,Chloe Hollobone - Leicester Hepatobiliary Unit University Hospitals of Leicester,Cristina Pollard - Leicester Hepatobiliary Unit University Hospitals of Leicester,Lilian Kuan - Leicester Hepatobiliary Unit University Hospitals of Leicester,Rohan Kumar - Leicester Hepatobiliary Unit University Hospitals of Leicester,Eyad Issa - Leicester Hepatobiliary Unit University Hospitals of Leicester,Ashley Dennison - Leicester Hepatobiliary Unit University Hospitals of Leicester,  
Category: Malignant

Aims  
  
Pancreatic cancer is the fifth most common cause of cancer death in the UK. The incidence of the disease approximated to the mortality, with around 7,500 to 8000 new cases and deaths each year in the UK. Surgical resection is the only real chance of any real long-term survival. Pancreatic cancer predominantly affects older adults who inevitably have an increase in co-morbidities. This study aims to describe the surgical outcomes for patients over the age of 75 selected for major pancreatic resection for pancreatic cancer.   
  
  
  
Methods   
  
This was a single centre retrospective observational study. Departmental records were reviewed for patients over the age of 75 undergoing major pancreatic resections for cancer between 1/1/2013 and 5/8/2017. 68 patients were identified (Age range 75-84, Median 79) and outcomes analysed.  
  
  
  
Results  
  
37 patients were male and 31 were female. 88% of patients were of white British origin. 69.7% of patients were ASA II and 30.3% ASA III. 46 (66%) patients underwent curative surgery. Mean ITU stay was 3 days (range 0-12). Mean overall stay was 13 days (range 5-48). Readmission rate was 26.5% (n=18) and complication rate was 22% (n=15). Clavien-Dindo score: grade 1 (n=0), Grade 2 (n=4), Grade IIIA (n=5), Grade IIIb (n=1), Grade IV (n=0), Grade V (n=1). There was one perioperative death (cardiac arrest at day 5 post whipples procedure). Perioperatively, 46.7% of the curative patients had complications compared to 17.4% of the palliative patients. There were four grade 1 pancreatic anastomotic failures and one 3b. Patients undergoing curative resection had a greater overall survival at 2 years (53.3%) compared to those undergoing palliative intervention (26.1%). Survival curves at 2 years demonstrated a significantly greater survival for patients undergoing curative surgical intervention (Log-rank test, p<0.0019).   
  
  
  
Conclusions  
  
Pancreatic cancer is a common cancer associated with a poor prognosis. It provides a difficult condition to manage, complicated by an aging population with multiple comorbidities. Total resection is the optimal curative treatment. In establishing the risks of operating on older adults, this study suggests that curative surgery in patients over 75 years old with operable disease is likely to contribute to their improved survival at 2 years. Further research is required in determining the overall prognosis and effects of higher rates of complications.

## Venous resection at pancreatoduodenectomy does not increase morbidity when performed in the presence of jaundice

Authors: R Pande - Liver Unit Queen Elizabeth Hospital Birmingham,M Kalisvaart, - Liver Unit Queen Elizabeth Hospital Birmingham,F Marcon - Liver Unit Queen Elizabeth Hospital Birmingham,R Marudanayagam - Liver Unit Queen Elizabeth Hospital Birmingham,RP Sutcliffe - Liver Unit Queen Elizabeth Hospital Birmingham,DF Mirza - Liver Unit Queen Elizabeth Hospital Birmingham,J Isaac - Liver Unit Queen Elizabeth Hospital Birmingham,KJ Roberts - Liver Unit Queen Elizabeth Hospital Birmingham,  
Category: Malignant

Aim  
  
Preoperative biliary drainage is undesirable prior to pancreatoduodenectomy due to an excess of complications. However the safety of PD plus venous resection in the setting of jaundice is unclear.   
  
  
  
   
  
Methods  
  
Consecutive patients undergoing PD plus venous resection for pancreatic cancer between 2011-2018 were identified and stratified into those proceeding directly to surgery with jaundice or those that had undergone PBD.   
  
  
  
Results  
  
Some 88 patients underwent PD with venous resection (no jaundice n=58 and jaundice n=30). The median bilirubin among the jaundiced cohort was 277 (range 78-613). There was no difference in the age, gender or BMI between the groups. Some 20 (34%) and 14 (47%) of patients developed some form of complication in the no jaundice and jaundiced groups (p=0.356) among which 4 (7%) and 3 (10%) had Clavien Dindo 3 or greater severity complication (p=0.686).   
  
The median Comprehensive Complication index was 0 for both the no jaundice and jaundiced groups (range 0-42 and 0-64 respectively, p= 0.097). There was no difference in POPF (3, 5% vs 3, 10%; p= 0.406) or 90 day mortality (3, 5% vs 2, 6%; p=1).  
  
  
  
Discussion  
  
  
  
PD with venous resection is safe among patients with jaundice when compared to patients who have no jaundice. Venous involvement should not be considered a contraindication to urgent surgery among patients with jaundice and a potentially resectable tumour.

## Pancreatoduodenectomy does not increase morbidity when performed in the presence of severe jaundice

Authors: R Pande - Liver Unit Queen Elizabeth Hospital Birmingham,M Kalisvaart - Liver Unit Queen Elizabeth Hospital Birmingham,F Marcon - Liver Unit Queen Elizabeth Hospital Birmingham,R Marudanayagam - Liver Unit Queen Elizabeth Hospital Birmingham,Robert Sutcliffe - Liver Unit Queen Elizabeth Hospital Birmingham,DF Mirza - Liver Unit Queen Elizabeth Hospital Birmingham,John Isaac - Liver Unit Queen Elizabeth Hospital Birmingham,KJ Roberts - Liver Unit Queen Elizabeth Hospital Birmingham,  
Category: Malignant

Aim  
  
Preoperative biliary drainage (PBD) is undesirable prior to pancreatoduodenectomy (PD) due to an excess of complications. However the safety of urgent PD among patients with high (300+ micromol/L) levels of jaundice is unclear.   
  
  
  
   
  
Methods  
  
Consecutive patients undergoing PD for periampullary cancer between 2011-2018 were identified and stratified into those proceeding directly to surgery with jaundice or those that had undergone PBD. Those patients with jaundice were further divided into those with low or high levels of bilirubin at surgery (< and > 300 micromol/L).   
  
  
  
Results  
  
Some 363 patients underwent PD with prior PBD and 110 with jaundice. There was no difference in the age, gender or BMI between the groups. There was no difference in the number of patients without any complication (212, 58.4% vs 62, 56.4%; p=0.741) or Clavien Dindo 3 or greater severity complications (50, 13.3% vs 17, 15.5% p=0.642), of type B or C POPF (39, 10.4% vs 9, 8.2% p=0.589) or of 90 day mortality (15, 4.1% vs 5, 4.5% p=0.791) between all patients with or without jaundice (regardless of bilirubin level). The median Comprehensive Complication index was 0 among both groups (p=0.912).  
  
  
  
There were 48 and 62 patients with low (median 207, range 31-298) and high (median 389, range 300-638) bilirubin respectively.   
  
When the cohort with low and high bilirubin were compared directly there was no difference in the proportion of patients without complications (25, 47.9% vs 37, 40.3% p=0.445) of Clavien Dindo 3 or greater severity complications (9, 18.8% vs 8, 12.9% p=0.414), of type B or C POPF (5, 10.4% vs 4 6.5% P=0.500 ) or of 90 day mortality between patients (3 6.3% vs 2, 3.2% P=0.651) with low or high bilirubin. The median Comprehensive Complication index was 9 for the low and 0 for the high jaundiced patients (p=0.280).   
  
  
  
Discussion  
  
  
  
PD without PBD is safe regardless of the level of preoperative bilirubin.

## Early aggressive management of postoperative pancreatic fistulas following Pancreatic Duodenectomy (PD). A five year single institution experience.

Authors: Rohan Thakkar - HPB and transplant surgery Freeman Hospital,Aditya Kanwar - HPB and transplant surgery Freeman Hospital,Jeremy French - HPB and transplant surgery Freeman Hospital,David BOurne - HPB and transplant surgery Freeman Hospital,Derek Manas - HPB and transplant surgery Freeman Hospital,  
Category: Malignant

Introduction  
  
Over the past two decades mortality rates as low as 1-3% have been reported from most high volume centers, but having said that morbidity rates still remain high (30% - 50%), often as a result of post-operative pancreatic fistulae (POPF), leading to prolonged hospital stays and increased costs.   
  
At our institute we treat all pancreatic fistulas defined by ISGPF criteria (13) with parenteral nutrition and an octreotide infusion for a minimum of 7 days. Our experience suggests that early and aggressive management of POPF could prevent Grade C fistulas.  
  
  
  
Materials and Methods  
  
We retrospectively analysed the data of 407 patients who underwent PD between 2013-2017. Case notes, patient electronic records, and dietician records were reviewed for all patients who experienced Grade B POPF. Data included details of total parenteral nutrition (TPN) recieved, dose of octreotide infusion administered, serial drain amylase levels, effluent volume and anthropometry which was monitored on a regular basis and recorded by the dieticians. Outcome measures were weight changes associated with treatment, the number of lines used per patient, the length of treatment, treatment associated complications and 90-day mortality rates.   
  
  
  
Results  
  
A total of 407 PD were performed from 2013-2018. 53 patients were documented as having Grade B POPF and all were treated with the ‘leak protocol’. The Grade B pancreatic fistulas rate was 13%. Median ages of the patients were 69 (Mean 65). Median hospital stay was 30.5 days (Mean 30.5). 90 lines were needed (1.7/patient) and parenteral nutrition was administered for an average of 20 days (Median 17 days). The commonest reason for line removal was suspected infection. The mean BMI on admission was 27.9 (Median 26.9) and on discharge 26.5(median 25.7) with an average weight difference of -4.9 %( Median - 4). There was one 90 day operative mortality recorded. 2 had postoperative primary haemorrhage, 2 had bile leaks, and 1 had a gastroenterostomy leak. 2 patients had Grade C fistulas requiring re-operation.   
  
Conclusion  
  
Our institutional practice has good results with a Grade C POPF incidence of 0.4% that is much lower than what is in literature (24). Prospective randomized controlled trials are needed in this area, with clearly defined criteria on indications, dose and timing of administration to assess the potential advantage of concomitant use of octreotide and PN. We think this management of pancreatic leaks have promising results.

## Inter-hospital variation of access to adjuvant chemotherapy after pancreaticoduodenectomy for pancreatic cancer

Authors: Asma Sultana - HPB/General Surgery East Lancashire Teaching Hospitals NHS Trust,James Hodson - Institute of Translational Medicine University Hospitals Birmingham ,Yvonne Steele - HPB Surgery University Hospitals Birmingham ,Yuk-Ting Ma - Oncology University Hospitals Birmingham ,Keith Roberts - HPB/Liver Transplant University Hospitals Birmingham ,  
Category: Malignant

Background: Randomised evidence supports adjuvant chemotherapy following resection for pancreatic ductal adenocarcinoma (PDAC), with proven overall survival benefit. There have been published reports of variability in the administration of adjuvant chemotherapy. This study assessed the administration of adjuvant chemotherapy following pancreaticoduodenectomy (PD) for PDAC, focusing on whether chemotherapy was given or not, the reasons for not giving adjuvant chemotherapy, and any variations in practice between the sites that delivered this service.  
  
  
  
Patients and methods: Consecutive patients who underwent PD for PDAC between January 2007 and December 2015 were identified from a prospective database. Data was collected on the treatment site, whether adjuvant chemotherapy was given and the reasons for non-administration or non-completion of adjuvant chemotherapy.   
  
  
  
Results: Data was available for 272 patients, with a mean age of 66.4 ± 9.3 years; 54% were male. Overall, adjuvant chemotherapy was administered in 67% of patients. There was a significant association between chemotherapy uptake and treating hospital volume (p=0.001), with hospitals treating <10, 10-30 and >30 patients during the period having rates of adjuvant chemotherapy administration of 56%, 65% and 80% respectively.  
  
  
  
Conclusion: Around one third of patients do not receive adjuvant chemotherapy after resection for PDAC, and there is significant variability in its administration between sites. Strategies to increase the use of adjuvant chemotherapy should result in increased survival among those patients who could potentially benefit.

## Calcium Channel Blockers Confer Significant Survival Benefit in Pancreatic Cancer

Authors: Sam Tingle - HPB Unit Freeman Hospital,George Severs - HPB Unit Freeman Hospital,Michael Goodfellow - HPB Unit Freeman Hospital,John Moir - HPB Unit Freeman Hospital,Steve White - HPB Unit Freeman Hospital,  
Category: Malignant

Aims – Calcium signalling has been implicated in apoptosis evasion, tumour invasion, metastasis and chemoresistance. A previous retrospective cohort study demonstrated patients prescribed CCBs displayed significantly improved overall survival following pancreaticoduodenectomy for PDAC. This study aimed to evaluate the benefit in unresectable PDAC, as well as the combined cohort with the resected patients.  
  
  
  
Methods – A retrospective cohort study of 164 patients with unresectable, histologically?confirmed PDAC was performed, combined with an additional analysis of a further 164 patients who underwent pancreaticoduodenectomy. Data was collected on CCB administration, and for a range of other potentially important prognostic indicators: ECOG performance status, AJCC cancer stage, patient age, hypertensive status and sex. Statistical analysis included Kaplan-Meier survival estimates, Cox regression and Pearson Chi-Square.  
  
  
  
Results – In the unresectable cohort, participants prescribed CCB (n=30) were more likely to be aged over 60 (P=0.004) and have hypertension (P<0.0005); baseline demographics were otherwise similar between groups. Adjusted cox regression revealed patients prescribed CCBs demonstrated significantly improved overall survival; HR-0.587 (P=0.036). Performance status (HR-2.129, P<0.0005), tumour staging (HR-2.749, P<0.0005) and chemotherapy regime (HR-0.591, P=0.001) were also independent predictors of survival. Kaplan-Meier estimated median survival was 15.3 months for patients prescribed CCBs versus 10.1 months for patients not prescribed CCB (P=0.131, logrank). Data from this unresectable cohort were combined with the patients who received a pancreaticoduodenectomy. In this larger cohort (n=328) CCB prescription was associated with increased overall survival (HR-0.571, P=0.002).  
  
  
  
Conclusion – This study supports previous findings that CCBs prolong survival in pancreatic cancer. Further work on larger datasets will allow for subgroup analysis delineating the effects of specific CCBs in combination with different forms of chemotherapy, paving the way for future prospective studies.

## RESPECT - A multicenter REtrospective Study on PrEoperative ChemoTherapy in locally advanced and borderline resectable pancreatic cancer

Authors: John Moir - HPB Unit Freeman Hospital,Maximillian Weniger - Department of General, Visceral and Transplantation Surgery Ludwig Maximilians University, Munich,Marko Damm - Department of Gastroenterology University Hospital Halle/Saale,Jonas Rosendahl - Department of Gastroenterology University Hospital Halle/Saale,Guralp Ceyhan - Department of Surgery Technical University Munich,Stephan Schorn - Department of Surgery Technical University Munich,RESPECT study group - Various Various,  
Category: Malignant

Aims  
  
In combination with more aggressive surgical techniques, neoadjuvant chemotherapy has the potential to convert borderline resectable (BRPC) and locally advanced pancreatic cancers (LAPC) into an operable scenario. With limited studies comparing different chemotherapy regimes, this study examines outcomes between FOLFIRINOX (FFX) and Gemcitabine-based therapy.   
  
  
  
Methods  
  
Data on 239 patients from 8 centers across Europe was gathered using an online database. Patients having received their first cycle of chemotherapy (+/- radiotherapy) for BRPC or LAPC before 06/2017, with minimum follow-up of 12 months, were included in the intention-to-treat analysis.   
  
  
  
Results  
  
Patients treated with FFX (n=135) and Gemcitabine+Nab-Paclitaxel (GNP) (n=38) had significantly improved radiological response according to RECIST criteria as compared to gemcitabine-monotherapy (GM) (n=16), with a partial/complete response of 59.3%, 55.3% and 6.25% respectively; p=<0.001. Furthermore the FFX and GNP groups had a significantly higher resection rate compared to GM (73.3%, 81.6% and 43.8%; FFX vs GM p=0.01, GNP vs GM p=0.005). In resected patients, chemotherapy regime did not influence R0 resection rates or OS, however patients on GM had significantly reduced PFS (p=0.02). Regardless of regime, patients who were resected had significantly prolonged OS as compared to non-resection (p<0.01).  
  
  
  
Conclusion  
  
Representing one of the largest studies of its kind, results suggest patients with BRPC/LAPC should be offered either FFX or GNP, as opposed to GM, to increase chances of resection, which in turn translates to survival benefit as compared to non-resection. Ultimately an RCT (e.g. ESPAC-5) will help determine best practice.

## Clinical utility of molecular profiling using EUS-guided biopsies in Pancreatic Cancer: The PRECISION-Panc experience

Authors: Stephan Dreyer - Institute of Cancer Sciences University of Glasgow,  
Category: Malignant

Introduction: Next-generation sequencing is enabling molecularly guided therapy for many cancer types, yet failure rates remain relatively high in Pancreatic Cancer (PC). The aim of this study is to investigate the feasibility of genomic profiling using endoscopic ultrasound (EUS) biopsy samples to facilitate personalised therapy in PC.  
  
Methods: 95 patients underwent additional research biopsies at the time of diagnostic EUS. Diagnostic formalin-fixed (FFPE) and fresh frozen EUS samples underwent DNA extraction, quantification and targeted gene sequencing. Matching resected specimens underwent genomic profiling for comparison. Whole genome (WGS) and RNA sequencing was performed in selected patients (Figure 1).   
  
Results: Only 2 patients (2%) with a diagnosis of PC had insufficient material for targeted sequencing in both FFPE and frozen specimens. Targeted panel sequencing (n = 54) revealed mutations in PC genes (KRAS, GNAS, TP53, CDKN2A, SMAD4) in patients with histological evidence of PC, including potentially actionable mutations (BRCA1, BRCA2, ATM, BRAF). WGS (n = 5) of EUS samples revealed mutational signatures that are potential biomarkers of therapeutic responsiveness. RNA sequencing (n = 53) segregated patients into clinically relevant molecular subtypes based on transcriptome; and reveals novel molecular differences between metastatic, locally advanced and resectable PC.  
  
To date, 52 patients have been biopsied under the PRECISION-Panc umbrella with no DNA extraction failures in the EUS biopsy cohort. This has allowed the design of a personalised medicine neoadjuvant trial in PC with pre- and post treatment molecular profiling.   
  
Conclusion: We demonstrate integrated multi-omic analysis of all stages of PC using standard EUS guided biopsies. This offers clinical utility to guide personalized therapy and study the molecular pathology in all patients with PC. Identifying gene signatures associated with pro-metastatic phenotype and poor prognosis pre-operatively may better select patients for neoadjuvant therapy rather than upfront resection. Translation into the PRECISION-Panc master protocol has demonstrated the clinical utility of this approach with excellent success rates, enabling molecular profiling in almost all patients with PC. This includes the ability to perform profiling in localised disease in the neoadjuvant setting resulting in the design and initiation of the PRIMUS-002 trial.

## PROTRACT study - standardising radiological reporting of pancreatic cancers

Authors: John Moir - HPB Unit Freeman Hospital,Paul Turner - Department of Radiology Freeman Hospital,John Scott - Department of Radiology Freeman Hospital,Gourab Sen - HPB Unit Freeman Hospital,Steve White - HPB Unit Freeman Hospital,Derek Manas - HPB Unit Freeman Hospital,Jeremy French - HPB Unit Freeman Hospital,Richard Charnley - HPB Unit Freeman Hospital,  
Category: Malignant

Aims  
  
A plethora of descriptive terms are currently used in the radiological reporting of pancreatic tumours and their association with surrounding vasculature which in turn defines tumour resectability. This pilot study aimed to generate and validate a radiological reporting proforma for borderline and locally advanced tumours in an effort to improve standardization and thus generate consistency in both clinical practice and within research literature.  
  
  
  
Methods  
  
A group of HPB surgeons and radiologists formed a think-tank to identify the key radiological factors that determine tumour resectability, with emphasis on vascular involvement whilst considering current guidelines (MD Anderson and AHPBA/SSAT/SSO/NCCN). The PRoTRACT (PancReatic Tumour Radiological Assessment and ClassificaTion) proforma was subsequently generated. A validation study was then performed to assess concordance between 2 radiologists reporting CT-Pancreas images (n=18) of borderline and locally advanced tumours.  
  
  
  
Results  
  
The PROTRACT proforma generated includes information on all aspects of pancreatic tumours, with a particular emphasis on quantifying, as opposed to describing, vessel involvement e.g. length (mm), axial circumferential degree and “compass position” of involvement, degree of stricturing, and presence of occlusion/invasion. The validation study revealed the SMV to be the most commonly involved vessel (72.2%) followed by the PV (50%), with a mean length and degree of involvement across all vessels of 20.5mm and 221° respectively. When analyzing concordance between the two reporters, the median concordance rate of vessel involvement, stricturing, occlusion and invasion was 69%, 80%, 100% and 100% respectively.   
  
  
  
Conclusion  
  
With further validation we believe the PROTRACT proforma could be a promising starting block for improved standardisation in the radiological reporting of pancreatic tumours. We hope the current pilot work may be built upon through constructive feedback to optimize the reporting process, and thus more reliably compare institutional results and ensure patients are more consistently classified into the appropriate tumour category with respect to potential future resection +/- vascular reconstruction.