ATU-05 EXPERIENCE OF ENDOSCOPIC SUBMUCOSAL DISSECTION (ESD) FOR TREATMENT OF GASTROINTESTINAL NEUROENDOCRINE TUMORS (NETS)

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10.1136/gutjnl-2019-BSGAbstracts.18

Introduction Although endoscopic submucosal dissection (ESD) of gastrointestinal (GI) neuroendocrine tumor (NETs) is an increasingly performed minimally invasive technique allowing complete en-bloc resection of mucosal and submucosal lesions, efficacy and safety outcome is limited. The aim of this study is to review two European centers experience of endoscopic treatment of superficial GI NET by ESD.

Methods Clinical and technical data of patients treated by ESD from two tertiary European centers were prospectively collected from October 2014 to February 2019. Complete resection (R0) was defined as clear lateral and vertical margins.

Results Twenty-four ESDs of NET were performed in 22 patients (females 59%), mean age of 54.8 years. Fifteen NETs (66%) were removed from the stomach, 6 from the rectum (25%), 1 from the esophagus (4%) and 1 from the duodenum (4%). 87.5% of gastric NETs were associated with atrophic gastritis (86.6% of which of autoimmune etiology) and 56% with previous history of multiples NETs. En-bloc resection was achieved in all patients (100%). R0 resection rate was 75% (91.6% clear lateral and 79% clear vertical margins). Lymphovascular infiltration was seen in one case (4%).

Median ESD duration time was 77 min (20–240). Two cases presented small perforations, treated conservatively by antibiotics and clip closure. The median specimen size was of 25 mm (12–50). Pathological examination showed 58.3% grade 1, 37.5% grade 2 and 4% grade 3 NETs. Sixteen lesions were characterized as pT1 (72.7%). Three patients were candidates for additional treatment: one had endoscopic mucosal resection for additional known lesions, one underwent surgery with oncological lymph node resection (finally pT2N1) and one refused systemic therapy. At the end of a median follow-up of 18 months, two cases of recurrence were identified: one was managed endoscopically, the second refused treatment.

Conclusions Our series of ESD for selected GI NETs showed favorable results in term of efficacy and safety. However, further studies are needed to determine the role of ESD compared to other resection modalities.

AWE-01 FEASIBILITY AND ACCEPTABILITY OF NOVEL COLONOSCOPY WITH COMPUTER AIDED EARLY DIAGNOSIS OF BOWEL CANCER

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10.1136/gutjnl-2019-BSGAbstracts.19

Introduction Patients with low risk bowel symptoms often triaged to a non-urgent pathway have longer diagnostic intervals and later detection of cancer. Resource and workforce constraints in delivery of secondary care colonoscopy contribute to these delays. This study presents preliminary data to investigate the acceptability and feasibility of a novel type of semi-automated robotic colonoscopy (portable with disposable probes not requiring reprocessing or decontamination) to potentially overcome delays between presentation, referral, diagnosis and treatment decision.

Methods Participants referred by their GP for direct colonoscopy underwent the new procedure (semi-automated robotic colonoscopy) and a parallel (back to back design) standard colonoscopy and were later interviewed via telephone to explore their experience and comparison between the two procedures. Comfort scores and colonoscopy quality indicators and outcomes were compared. An online GP survey exploring feasibility of the new procedure in a primary care setting was also conducted. We also analysed the feasibility and accuracy of developing a machine learning tool to interpret findings at both novel and standard colonoscopy.

Results Participants (6 M, 9 F) perceived the value, usefulness and purpose of the new procedure, with favourable comparisons made to standard colonoscopy, particularly previous experience of pain and recovery. Lack of requirement for sedation was a key benefit of the new procedure. Primary care was endorsed as a location, with proximity and familiarity viewed favourably, particularly in overcoming negative aspects of bowel preparation and recovery (e.g. not wanting to travel far). Those feeling they would not need sedation also viewed primary care positively. Others were indifferent, with feelings that it was such an undesirable procedure that location would not matter. Twenty-nine GPs completed the online survey. Barriers to the new procedure in GP practices included perceived lack of expertise to interpret findings (74% agreement) and not enough space for equipment (59% agreement). Nearly half of participants felt the new procedure had the potential to impact quicker diagnosis (48% agreement), and all participants felt it had the potential to achieve early diagnosis in low risk bowel symptoms not meeting 2 week wait criteria (100% agreement).

Conclusions Target users found the new procedure acceptable and viewed it favourably compared to standard colonoscopy. GPs perceived uses for the new procedure in primary care, particularly for low risk patients, however expertise and space were a concern. These findings are positive as the new

procedure has the potential to improve issues with colonoscopy capacity and diagnostic workforce in the NHS, with a larger scale study now needed. We have previously published on the training requirements and learning curve for the novel colonoscopy procedure and will also present data on computer aided analysis and interpretation of findings at colonoscopy.

AWE-02 MORPHOLOGICAL AND MOLECULAR MARKERS FOR COEXISTENT ADENOCARCINOMA IN LOW-GRADE DYSPLASTIC AREAS OF HIGH-GRADE COLORECTAL ADENOMAS

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10.1136/gutjnl-2019-BSGAbstracts.20

Introduction Successful endoscopic resection (ER) relies on endoscopic diagnosis to predict the risk of invasive cancer. However, a detailed evaluation of histopathological features and the molecular profile of the dysplastic mucosa to predict coexistent invasive cancer is not available.

Methods ER of large colorectal adenomas (2011–2016) were analysed. A subset containing high-grade dysplasia, intramucosal cancer or invasive cancer was identified and subjected to detailed histopathological analysis: ulceration, distribution of high-grade dysplasia, dysplastic nuclear grade, presence/distribution of necrosis, and distribution of tumour-infiltrating lymphocytes (TIL). Microdissection, DNA extraction and next-generation sequencing using a human clinically relevant tumour panel of 24 genes were performed separately for two areas with the highest morphological grade from each lesion.

Results ER was performed for 418 large (≥ 20 mm) adenomas. Histopathological genetic evaluation was available in 70 high grade cases. Coexistent adenocarcinoma significantly correlated with adenomatous mucosa featuring ulceration, mixed interface/interstitial TIL, multifocal high nuclear grade, infiltrative edges, and multifocal intraluminal necrosis. Multifocal intraluminal necrosis and high nuclear grade in the adjacent low-grade dysplastic mucosa were driven by cooperative genetic abnormalities of high-impact (FLT4), moderate impact (KRAS/NRAS for infiltrative edges, FLT4, TP53, ERBB2), and low impact (FGFR3, PDGFA).

Conclusions The dysplastic stage of high-grade adenomas is characterized by multiple cooperative genetic mutations. A subset of these identify a risk of coexistent adenocarcinoma with a close correlation between genetic markers of angiogenesis (FLT4), receptor activation (RAS/ERBB2), genome maintenance (TP53) and stromal reaction (FGFR3, PDGFA) with morphological features defined by high nuclear grade, intraluminal necrosis, and inflammatory stromal reaction.

AWE-03 MANAGEMENT OF PANCREATIC WALLED OFF NECROSIS WITH LUMEN APPOSING METAL STENTS: UK SINGLE CENTRE EXPERIENCE

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10.1136/gutjnl-2019-BSGAbstracts.21

Background Endoscopic ultrasound (EUS)-guided transmural drainage is the preferred treatment for symptomatic pancreatic

walled-off necrosis (WON). Lumen apposing metal stents (LAMS) are increasingly used, although their advantage over plastic stents remains unclear. Placement of a plastic pigtail stent within the LAMS may help maintain patency and help avoid the need for subsequent endoscopic necrosectomy. We aim to describe the success and complication rates for the use of LAMS in the management of WON.

Methods All patients undergoing EUS-guided cystgastrostomy using LAMS for WON between July 2015-January 2019 were included. Data collected included procedural technique, rates of technical and clinical success and complications. All patients had up to date CT or MR scans and all were reviewed in the specialist MDM prior to intervention.

Results 40 patients underwent LAMS placement for WON, 75% male, median age 53 years (range 23–79). The aetiology of pancreatitis was: gallstones (n=17), alcohol (n=12), idiopathic (n=9) and post-ERCP (n=2). Mean collection size on pre-procedure imaging was 12 cm (range 4–22). 21 (52.5%) procedures were performed under general anaesthesia, 14 (35%) propofol sedation and 5 (12.5%) conscious sedation. LAMS were placed from the stomach (n=38, 95%) or duodenum (n=2, 5%) and were successfully deployed in 39 (98%). LAMS diameter was 8 mm (n=7), 10 mm (n=5), 12 mm (n=1), 15 mm (n=24) and 20 mm (n=3). Pigtail stents were placed within the LAMS in 14 cases (35%) but did not significantly alter the need for subsequent endoscopic necrosectomy (28% with pigtail stent vs 27% without). Follow up CT demonstrated a reduction in collection size in all cases with a mean maximal diameter of 2.6 cm (0–5 cm).

Successful drainage was achieved in 98% at 3 months (1 patient died from complications of acute pancreatitis, unrelated to stent placement) and no patient required percutaneous or surgical drainage. There were two complications; 1) late migration of the gastric flange into the collection, presenting with sepsis 6 weeks post insertion and successfully retrieved following placement of a second LAMS and 2) buried gastric flange, leading to delayed LAMS removal and successfully retrieved 7 months post insertion after transmural tract dilation using large diameter biopsy forceps. Median time to LAMS removal was 51 days (range 26–80). LAMS remained in situ for 21 months in one patient lost to follow-up but was removed without complication.

Conclusion Transmural drainage of pancreatic WON using LAMS has excellent rates of technical and clinical success with few complications. Unlike in other published series, we did not observe any late bleeding complications. In our cohort, placement of a pigtail stent through the LAMS did not negate the need for subsequent endoscopic necrosectomy.

AWE-04 NEAR-FOCUS NBI CLASSIFICATION OF VILLOUS ATROPHY IN SUSPECTED COELIAC DISEASE: INTERNATIONAL DEVELOPMENT AND VALIDATION

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10.1136/gutjnl-2019-BSGAbstracts.22