subtypes of IPCL patterns. Such a validated system could be used *in vivo* to alert endoscopists to the presence of ESCN and direct planning of appropriate EET.

ADTH-08 ROBOT MAGNET-CONTROLLED UPPER GASTROINTESTINAL CAPSULE ENDOSCOPY: NON-INVASIVE INVESTIGATION WITH EXCELLENT PATIENT TOLERANCE

Hey-long Ching, David Tai, Melissa F Hale, Reena Sidhu, Mark E McAlindon. *Royal Hallamshire Hospital, Sheffield, UK*

10.1136/gutjnl-2018-BSGAbstracts.20

Introduction Gastroscopy (OGD) is invasive and not always well tolerated. The NaviCam® (Ankon Technologies Co. Ltd., Shanghai, China) combines capsule endoscopy technology with external robot magnetic control. Operator joysticks command the robot to steer the capsule within the stomach. Real-time visualisation is displayed on two workstation monitors. When compared to OGD, the NaviCam® has already demonstrated high sensitivity and specificity for identifying focal gastric lesions.¹ The focus of this study was to grade imaging quality and patient tolerance of the NaviCam®.

Method Patients with dyspepsia were recruited. Patients swallowed 100 mls of water (containing 10 mls simethicone) 15 min prior to 1L of water followed by the NaviCam®. Clarity of views and adequacy of gastric distension were assessed (1, poor; 2, reasonable; 3, good), as was completeness of views of the oesophagogastric mucosa (1, >75% obscured; 2, >50% obscured; 3, <50% obscured; 4, <25% obscured; 5, 100% visualised). Patient tolerance scores were collected (worst-best=0–10). All patients subsequently had OGD and tolerance scores were compared to those of the NaviCam®.

Results Eighteen participants were included (mean age 53 ±16.1 years, 27.8% male). The NaviCam could be held stationary within the stomach (resisting peristaltic waves) and could cartwheel over rugal folds to a chosen proximal location using a preset programme activated by a 'shoot' button on the joystick. Mean examination duration was 25±3.4 mins. Mean clarity (2.3±0.7) and distension scores (2.9±0.3) were good. Complete views (5±0) for all areas of the gastric body (greater and lesser curvature, anterior and posterior wall) and distal stomach (antrum and pylorus) were achieved. Views of the oesophagus (4.3±1.3) and proximal stomach (cardia, 4.9 ±0.2; fundus 4.8±0.3) were also good. Duodenal images were not assessed real-time (but are provided after the capsule traverses the pylorus). Tolerance scores for anxiety, discomfort and pain were all lower with MACE compared to OGD (2.2 ±1.4 vs 5.8±3, 1.3±1 vs 4.9±3, 2.4±2.4 vs 3.4±2.5, respectively; $p<0.05$ for all). Tolerance scores for undesirable symptoms associated with upper gastrointestinal (GI) endoscopy, namely gagging, choking and bloating were also more favourable with MACE compared to OGD (1.4±1.6 vs 5.4±3.3, 1.3 ±1.2 vs 4.8±3.3, 1.2±0.5 vs 2.9±2.0, respectively; $p<0.05$ for all).

Conclusion The NaviCam® demonstrates excellent oesophago-gastric views. The NaviCam® is extremely well tolerated compared to OGD and patients experience significantly fewer undesirable symptoms associated with upper GI endoscopy.

REFERENCE

1. Liao Z, et al. *Clin Gastroenterol Hepatol* 2016;**14**(9):1266–73.e1.

ADTH-09 CAPSULE ENDOSCOPY HAS BETTER DIAGNOSTIC YIELD THAN GASTROSCOPY IN RECURRENT IRON DEFICIENCY ANAEMIA

Hey-long Ching*, Melissa F Hale, Reena Sidhu, John M Hebden, Matthew Kuriem, Jennifer A Campbell, Stefania Chetcuti Zammit, Ailish Healy, Victoria Thurston. *Royal Hallamshire Hospital, Sheffield, UK*

10.1136/gutjnl-2018-BSGAbstracts.21

Introduction Repeat upper gastrointestinal (GI) examination and small bowel capsule endoscopy should be considered in iron deficiency anaemia (IDA) when recurrent/refractory. Magnetically assisted capsule endoscopy (MACE) using a handheld magnet to steer the MiroCam Navi (Intromedic Ltd., Korea) capsule around the stomach followed by passive small bowel transit might satisfy both requirements as a single procedure.

Methods MACE was performed in patients with recurrent/refractory IDA who were due gastroscopy (OGD). Total (upper GI and small bowel) and upper GI diagnostic yields and patient tolerance of the two modalities were compared. Assuming a diagnostic yield of 25% and 55% for OGD and small bowel capsule endoscopy (SBCE) respectively in recurrent/refractory IDA, 41 patients were needed to achieve 80% power and 5% two-sided significance. McNemar's test was used to measure differences in paired proportions. To allow for withdrawal, 50 patients were recruited. MACE mucosal visualisation was also assessed.

Results OGD was performed within 2 days (IQR=13) of MACE in 49 patients (one failed to attend for OGD; median age 64 years (IQR=13), 39% male). Combined upper and mid-gut examination using MACE and passive SBCE yielded pathology in more patients than OGD alone (32 vs 6 (CI, 0.37 to 0.69); $p<0.0001$). Comparing only upper GI examination (proximal to D2), MACE identified more total lesions than OGD (88 vs 52, $p<0.0001$). If only lesions recognised as sources of IDA are included (oesophagitis, altered/fresh blood, angiodysplasia, ulcers and villous atrophy), a difference remains (20 vs 10; $p=0.04$). Small bowel (distal to D2) pathology was present in 24 (49%) patients (angiodysplasia (n=15), erosions (n=6), polyp (n=1), active bleeding (n=1), small bowel varices (n=1) and diverticulae (n=1)), considered to cause IDA in 11 (22%) patients who had no upper GI cause. Median scores (worst-best=0–10) for pain (0 vs 2), discomfort (0 vs 3) and distress (0 vs 4) were significantly lower for MACE than OGD respectively ($p=0.0001$ for all). Visualisation of gastric regions differed significantly ($\chi^2=209.5$, $p<0.05$, Kruskal-Wallis H test). Better rank visualisation scores of ≥ 350 were seen for the greater and lesser curve, anterior and posterior body, antrum, pylorus and D2 while lower for the oesophagus (222), GOJ (103), cardia (267), fundus (189) and D1 (198).

Conclusions Combined upper GI and small bowel examination with the MiroCam Navi yields more pathology than OGD alone in patients with recurrent/refractory IDA. MACE also has better diagnostic yield than OGD in the upper GI tract and was better tolerated.

ADTH-10 EFFICACY AND SAFETY OF 1L-PEG AND ASCORBATE BOWEL PREPARATION NER1006 VERSUS 2L-PEG WITH ASCORBATE

Richard Ng*, Raf Bisschops, Jonathan Manning, Marco Antonio Alvarez Gonzalez. *Norgine, Harefield, UK*

10.1136/gutjnl-2018-BSGAbstracts.22

Introduction PEG based preparations are traditionally seen as the gold standard in cleansing, but they all require a high total fluid intake. NER1006 is the first 1L-PEG 3350 and ascorbate bowel preparation.

Methods This phase 3, randomised, multicentre, colonoscopist-blinded, non-inferiority study assessed the efficacy, safety and tolerability of NER1006, administered either as a 2 day overnight (N2D) or 1 day morning (N1D) split-dosing regimen versus a 2L-PEG 3350 with ascorbate 2 day overnight split dosing regimen (2LPEG) in patients undergoing a colonoscopy. Two alternative primary endpoints were evaluated: overall bowel cleansing efficacy and 'Excellent or Good' cleansing rate in the ascending colon and caecum using the Harefield Cleansing Scale (HCS). Secondary endpoints included hierarchical evaluation of lesion detection rates (key), and cleansing assessment using the Boston Bowel Preparation Scale (BBPS; supportive). Patient tolerability, acceptability and compliance were assessed using questionnaires. Safety was monitored through adverse events and clinical laboratory evaluation. The threshold for statistical significance in this study was $p < 0.025$ and a 10% margin was used to demonstrate non-inferiority vs 2LPEG. Patients were randomised to receive either N2D, N1D, or 2LPEG.

Abstract ADTH-10 Table 1 (mFAS Population)

	Groups			Confidence Interval (CI), [P value]	
	NER1006 N2D	NER1006 N1D	2LPEG	N2D	N1D
Patients, N	275	275	272		
Primary Endpoints:					
Successful Overall	253	245	238	−4.00%*,	−6.91%*
Bowel Cleansing (HCS)	(92.0%)	(89.1%)	(87.5%)	[0.055]	[0.328]
Excellent/Good cleansing in the Ascending Colon/ Caecum (HCS)	87 (31.6%)	93 (33.8%)	41 (15.1%)	8.11%*, [<0.001]	10.32%*, [<0.001]
Key Secondary Endpoints:					
ADR* Ascending Colon/Caecum	11.6%	11.6%	8.1%	−4.80%;12.00% **, [0.106]	−4.80%;12.00% **, [0.106]
ADR* Overall Colon	26.6%	27.6%	26.8%	−8.74%;8.02% **, [0.569]	−7.65%;9.11% **, [0.455]
PDR* Ascending Colon/Caecum	23.3%	18.6%	16.2%	−1.41%;15.47% **, [0.024]	−6.12%;10.82% **, [0.268]
PDR* Overall Colon	44.0%	45.1%	44.5%	−8.85%;8.00% **, [0.579]	−7.78%;9.09% **, [0.478]

* 97.5 1-sided CI, ** 95% 2-sided CI, —not applicable

*Adenoma Detection Rate (ADR), Polyp Detection Rate (PDR)

Results Compliance rates were high in all treatment groups. There were no deaths. NER1006 was not associated with any serious treatment-emergent adverse events (TEAEs). The most frequently reported related TEAEs for NER1006 were nausea and vomiting; and for 2LPEG, nausea and abdominal pain.

Conclusions When administered as either a 2 day overnight or 1 day morning split-dosing regimen, and compared to 2LPEG, NER1006 was non-inferior in overall bowel cleansing success.

It also demonstrated a superior 'Excellent or Good' cleansing rate in the ascending colon and caecum. As a 2 day overnight split dosing NER1006 demonstrated a superior polyp detection rate in the ascending colon and caecum. The overall tolerability and safety profile of NER1006 was comparable to that of 2LPEG; most TEAEs were mild or moderate in severity and reflected the expected safety profile of the respective treatments.

PTH-001 ENDOSCOPIC MANAGEMENT AND OUTCOMES FOR PATIENTS WITH FOOD BOLUS OBSTRUCTION

Amgad Abdelrahman*, Perminder S Phull. *Aberdeen Royal Infirmary, Aberdeen, UK*

10.1136/gutjnl-2018-BSGAbstracts.23

Introduction Food Bolus Obstruction (FBO) often presents as an emergency, with an estimated incidence of 13 per 100 000 population (Longstreth *et al.* *Gastrointest Endosc* 2001;53:193–8). Endoscopic management is required in many cases, but carries a risk of complications. Our aim was to audit the management and outcomes for patients with FBO admitted to our institution.

Methods We reviewed all cases presenting with FBO to the Emergency Department and/or admitted to the hospital between October 2014 and October 2017. Data was retrieved from the hospital electronic patient records for demographics, duration of stay, performance of endoscopy as well as the endoscopic findings, FBO removal technique and any complications.

Results A total of 160 patients presenting with FBO were identified; 103 (64%) males and 57 (36%) Females, average age of 65 years. Of these, 55 (34%) patients passed the food bolus spontaneously without a referral for endoscopy. Of the 105 (66%) patients who had an endoscopy, data on the time of admission and the time of endoscopy was available for 62 (59%) patients. 11 (18%) patients had endoscopy within 4 hours and 51 (82%) within 24 hours. At endoscopy, an addition 32 (30%) patients were found to have passed the food bolus spontaneously, whilst 72 (70%) needed endoscopic intervention; the push technique was most often employed (33% of cases). Endoscopic therapy was effective in 66 (91.2%) patients. Of the 6 patients in whom initial endoscopic therapy was unsuccessful, 2 patients were intolerant of the procedure (one required an endoscopy under general anaesthetic, and the other patient underwent a repeat procedure the following day successfully); 2 patients had FBO at a high level requiring ENT referral; 2 patients sustained an oesophageal perforation). The underlying pathology was documented as benign stricture/web/Schatzki ring in 20 (19%) of cases, oesophagitis in 12 (11%), oesophageal malignancy in 9 (8%), hiatus hernia in 3 (3%), eosinophilic oesophagitis 1 (1%), oesophageal spasm 1 (1%), Barrett's oesophagus 1 (1%) and candidiasis in 1 (1%); 57 (55%) of patents had no underlying oesophageal abnormality. Endoscopic complications were seen in 4 (4%) patients – mucosal tear in 2 cases and perforation in 2 cases. The duration of hospital stay was 1 day in 136 (85%), 2 days in 16 (10%) and 3 or more days in 8 (4%) of cases.

Conclusion FBO resolves spontaneously in around half of cases. Endoscopic therapy has a high success rate for the remaining patients, but is associated with a small risk of complications.