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

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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.

Methods 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 oesophago gastric mucosa (1, >75% obscured; 2, <50% obscured; 3, <25% obscured; 5, 100% visualised). Patient tolerance scores were collected (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 travels 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, 1.3±1 vs 4.9±3.9, 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 oesophagogastric views. The NaviCam® is extremely well tolerated compared to OGD and patients experience significantly fewer undesirable symptoms associated with upper GI endoscopy.

**REFERENCE**


**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 Helden, Matthew Kurien, Jennifer A Campbell, Stefania Cheruti Zammit, Ashly Healy, Victoria Thurston. Royal Hallamshire Hospital, Sheffield, UK

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<0.001). 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, angioectasia, ulcers and villous atrophy), a difference remains (20 vs 10; p=0.04). Small bowel (distal to D2) pathology was present in 21 (41%) patients (angioectasia (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 (21%) 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 (χ²=209.3, 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

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Introduction One litre of polyethylene glycol (1L-PEG) plus ascorbate bowel preparation is commonly used in the UK for diagnostic upper and lower endoscopy. Practitioners are increasingly using less preparation to reduce patient discomfort. A randomised study compared a bowel preparation containing 1L of PEG and ascorbic acid versus 2L of PEG with ascorbic acid in patients with recently symptomatic colonic polyps.

Methods NER1006 is a bowel preparation of 1L-PEG plus 35g ascorbic acid, administered over 2 hours with an additional two tablets at night. The study was a multicentre, open label, 2:1 randomisation (N=60) in patients ≥18 years with a recent colonoscopy demonstrating ≥1 polyp >5 mm. Patients with inflammatory bowel disease, ascites, or who had recently undergone bowel surgery were excluded. All patients were recruited at the Royal Hallamshire Hospital, Sheffield, UK and patients consented in person. The study protocol was approved by the Norgine SREC. Patients were randomised to suitable 1L-PEG preparation (NER1006) or conventional 2L-PEG with ascorbic acid. The primary outcome was presence of unresectable colon polyps >5 mm at a video capsule endoscopy (VCE) performed before any polyp excision. Secondary outcomes were compliance, acceptability, and presence of visible faecal blood (VFB) at VCE.

Conclusion The study was closed early because of significant differences between the groups. The 1L-PEG preparation was well tolerated, and patients considered it better than conventional 2L-PEG. The 1L-PEG plus ascorbic acid preparation should be further evaluated in a large phase 3 study.
Abstract ADTH-10 Table 1 (mFAS Population)

<table>
<thead>
<tr>
<th>Group</th>
<th>Confidence Interval (CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NER1006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N2D</td>
<td>275</td>
<td>275</td>
</tr>
<tr>
<td>NER1006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1D</td>
<td>245</td>
<td>238</td>
</tr>
<tr>
<td>2LPEG</td>
<td>243</td>
<td>237</td>
</tr>
<tr>
<td>N2D</td>
<td>(87.5%)</td>
<td>(0.055)</td>
</tr>
<tr>
<td>N1D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2LPEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N2D</td>
<td>87</td>
<td>93</td>
</tr>
<tr>
<td>N1D</td>
<td>(31.6%)</td>
<td>(33.8%)</td>
</tr>
</tbody>
</table>

Key Secondary Endpoints:

- Adenoma Detection Rate (ADR) Ascending Colon/Caecum: 11.6% 11.6% 8.1% –4.80%;12.00% <0.016;0.106 0.016
- Adenoma Detection Rate (ADR) Overall Colon: 26.6% 27.6% 26.8% –8.74%;8.02% –7.65%;9.11% 0.569 0.105 0.015
- Polyp Detection Rate (PDR) Ascending Colon/Caecum: 23.3% 18.6% 16.2% –1.41%;15.47% –6.12%;10.82% 0.024 0.268
- Polyp Detection Rate (PDR) Overall Colon: 44.0% 45.1% 44.5% –8.85%;8.00% –7.78%;9.09% 0.579 0.016 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.