PTU-042 FIRST EVALUATION OF MULTI-MODAL FICE FOR DETECTION AND DIFFERENTIATION OF SMALL BOWEL LESIONS AT CAPSULE ENDOSCOPY

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A Murino,* E J Despott, Z Tsiamoulos, A O'Rourke, B Saunders, C Fraser *Wolfson Unit for Endoscopy, St Mark's Hospital and Academic Institute, Imperial College London, London, UK*

Introduction Multi-modal Flexible spectral Imaging Color Enhancement (FICE) (Fujinon, Saitama, Japan) is a novel imaging technique, which attempts to augment endoscopic detection and differentiation of gastrointestinal lesions. FICE is computer aided reprocessing that enhances original white light (WL) images by reconstituting virtual ones for a range of different optical wavelengths. Recently FICE has also been incorporated into reporting software of the most widely available small bowel capsule endoscopy (SBCE) system (GIVEN Imaging, Israel). This is the first study to evaluate the usefulness of FICE computer aided detection and differentiation of small bowel (SB) lesions seen at SBCE.

Methods 30 WL video clips (10 seconds each), subdivided into six diagnostic categories (angioectasias, ulceration, polyps, coeliac disease, bleeding, normal) were selected from our SBCE database by an experienced capsule endoscopist. Each of these clips was then reprocessed to generate an additional four multi-modal

FICE versions in different optical wavelengths (red, blue, green and enhanced contrast FICE). This generated a total 150 SBCE video clips (including original WL clips) that were evaluated by three experienced capsule endoscopists, blinded to the content of each clip. The primary endpoint was the assessment of high confidence interpretation of the correct diagnosis.

Results Interim analysis of the results at this stage, suggest that the correct identification of the lesions appeared to be broadly similar for WL and all multimodal FICE wavelengths (84% for WL vs 89% for FICE). However, the confidence level of reporting appeared to be higher for WL than for FICE (84% vs 68%) at this stage. Intra-group analyses for FICE showed that the confidence level of reporting was highest for high contrast FICE and lowest for blue FICE (68% vs 45%).

Conclusion The preliminary results suggest that although the diagnostic accuracy of FICE appears to be similar to that of WL, the confidence of reporting with FICE appears to be lower. This may be reflective of the novelty of the technology and therefore, minimal operator experience in its use. Further larger studies are required to evaluate any potential benefit of FICE over WL SB lesion detection and differentiation.

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