Conclusion The presented study describes applicability for PACT in the successful treatment of highly resistant CD spores using a two-phase antimicrobial approach and that taurocholic acid is non-toxic to humans. This strategy could be effective at reducing the significant numbers of patients with relapsing CD, the length of stay for these patients, associated morbidity as well as the potential mortality of CD which mostly arises from this sub-group of patients.

Disclosure of Interest None Declared.

PTH-008 PHOTODYNAMIC ANTIMICROBIAL CHEMOTHERAPY (PACT) SELECTIVELY KILLS CLOSTRIDIUM DIFFICILE OVER COLON CELLS AND IS EFFECTIVE AGAINST 5 HYPERVIRULENT STRAINS OF THE PATHOGEN

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Introduction *Clostridium difficile (CD)* is the leading cause of hospital and community-acquired antibiotic-associated diarrhoea in the developed world. Since 2003, a new lineage of strains with more severe virulence has emerged, leading to an increased number of outbreaks of disease in North America and Europe and raising the impellent need for an effective therapy. Photodynamic Antimicrobial Chemotherapy (PACT) utilises the ability of light-activated photosensitisers (PS) to produce free radical species lethal to the target pathogens. To date, no pathogens have developed resistance to PACT. This study aimed to develop and evaluate PACT for the treatment of *CD*.

Methods High throughput screening of 15 photosensitiser (PS) drugs were performed in aerobic conditions against the hypervirulent R20291 strain of *CD*. These included both clinically approved PS drugs and experimental PS's engineered for *CD*. Lead candidate agents were then tested against *C. difficile* strain R20291 in microaerophilic and anaerobic conditions, against 4 of the other most clinically significant hypervirulent *CD* strains, each belonging to a different ribotype, and against the human colonic cell line HT-29 at effective antimicrobial doses to exclude background colonic cytotoxicity.

Results Nine PS were successful in killing 99.99% of R20291 at a concentration of 10 μM after exposure to laser light at 665 nm at an intensity of 24 mJ/cm2. Remarkably, three of them (S4, CE6 and PS4) also reduced bacterial growth by 99.9% in absence of oxygen at the concentration of 50 μM and no PS-associated toxicity was observed in the absence of light. PACT was found to be similarly effective against all 5 hypervirulent *CD* strains. Three PS were not toxic to HT-29 cells at effective antimicrobial concentrations.

Conclusion We have found PACT effectively kills the 5 most clinically relevant hypervirulent *CD* strains. PACT efficacy traditionally is thought to require oxygen to generate reactive oxygen species. We have shown PACT to be effective in anaerobic conditions mimicking the colonic microenvironment in which *CD* reside. As PACT was not toxic to human HT-29 cells at effective antimicrobial doses, this would permit selective targeting of the pathogen in the site of infection. It is believed the research being undertaken could be an important step towards the eradication of *C. difficile* colitis.

Disclosure of Interest None Declared.

PTH-009 ENDOSCOPISTS WHO ARE METICULOUS IN THEIR CAECAL IMAGE DOCUMENTATION DETECT MORE POLYPS

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Introduction Adenoma detection is now accepted as an important quality indicator of colonoscopy. There is a significant variation in polyp detection rates among colonoscopists. Although the ESGE has recommendations regarding quality of images taken during endoscopy, there are no studies looking at the quality of caecal images versus outcomes of the procedures.

Here we tested our hypothesis of endoscopists who have better quality image documentation of the caecum have higher polyp detection.

Methods This retropective study was between June 2011 and May 2012. Planned colonoscopies performed by 16 experienced colonoscopists were included.

We excluded procedures with planned therapeutic procedures, inadequate bowel preparation, rectal hyperplastic polyps, bowel cancer screen colonoscopies, previous hemicolectomy and incomplete procedures.

The pre-procedure data collected were age and gender of patients, indication of procedures. The intra-procedure data collected were duration of the procedure, number of images stored in the endoscopy database, quality of caecal image, number of polyps (excluding rectal hyperplastic polyps). We cross-checked our pathology database to confirm histology of the polyps.

We formulated a new scoring system, caecal image documentation score (CIDS). The CIDS was as follows; no image = 0, unclear image = 1, clear image = 2 and clear image with a label = 3.

Results A total of 651 procedures performed by 16 colonoscopists were analysed. The mean number of procedures performed by each colonoscopist was 41. Mean age of the patients was 60.3 years. 46% of the patients were males. The mean CIDS for the 16 endoscopists was 2.13. The mean polyp detection rate (PDR) was 24% and mean polyp per procedure (PPP) was 0.42.

Colonoscopists with mean CIDS > 2.0 (n = 429 procedures, 10 colonoscopists) had PDR of 28% and PPP of 0.52. On the other hand, 6 colonoscopists (222 procedures) with mean CIDS of < 2.0 had PDR of 16% and PPP of 0.24.

Mean CIDS > 2.0 was associated with greater PDR (OR 2.1, CI 1.4 – 3.2 p = 0.001). When adjusting for age, gender, and indication for colonoscopy, the mean CIDS > 2.0 remained an independent predictor of greater PDR, OR 2.4, 95% CI 1.5 – 3.8 p < 0.001.

Mean CIDS > 2.0 was associated with greater right-sided polyp detection rate, OR 3.4, CI 1.9 – 6.6 p < 0.001. When adjusting for age, gender, and indication for colonoscopy, the mean CIDS > 2.0 remained an independent predictor of greater right-sided PDR, OR 4.0, 95% CI 2.2 – 8.1 p < 0.001.

Abstract PTH-009 Table 1

	Polyp per procedure	Polyp detection rate (PDR)
Colonoscopists with mean CIDS > 2.0	0.52	28%
Colonoscopists with mean CIDS < 2.0	0.24	16%

Conclusion Colonoscopists who are more meticulous in caecal image documentation detect more polyps per procedure and have higher polyp detection rates. Better caecal image documentation also improves right colonic polyp detection.

Disclosure of Interest None Declared.

PTH-010 RISES IN BOTH WHITE CELL COUNT AND CRP AT DAY 3 PREDICT FAILURE OF TREATMENT WITH METRONIDAZOLE IN C.DIFFICILE INFECTION

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Introduction *C.difficile* infection (CDI) is the most serious cause of hospital-acquired diarrhoea. Factors predicting outcome are unclear. We have assessed possible biomarkers of failure to respond to metronidazole in a prospective series of 43 inpatients with CDI.

Methods At diagnosis (T^1) and after 3 days (T^2) of metronidazole 400mg tds po (n = 33) or 500mg tds iv (n = 10), we assessed haemoglobin, white cell count (WCC), platelet count, C-reactive protein (CRP), creatinine, albumin, pulse, BP, temperature, stool frequency and Bristol score. Cure was defined as formed stool on 2 consecutive days within 7 days of starting metronidazole; failure was clinical deterioration needing treatment with vancomycin, colectomy and/or death within 28 days. Positive and negative predictive values (PPV, NPV) for failure of metronidazole were calculated.

Results 17 patients failed metronidazole: 7 needed vancomycin and 10 died. Regardless of outcome, there were significant falls in CRP, pulse, stool frequency between T^1 and T^2; however, neither WCC and Bristol stool score did not fall in treatment failures (Table). The other measures did not change in either group (data not shown). PPV for treatment failure of increases in WCC and CRP (as separate variables) between T^1 and T^2 were 67% and 57%, with NPV 75% and 65% (accuracies 72% and 63%), respectively. However, PPV and NPV for treatment failure of increases in both WCC and CRP between T^1 and T^2 were 100% and 62% (accuracy 75%).

Table. Mean (SEM); *p < 0.05, **p < 0.001 from T^1

Abstract PTH-010 Table 1

		WCC	CRP	Pulse	Stool frequency	Bristol score
Cured	T^1	13.2 (1.5)	113 (20.8)	95 (5.0)	3.6 (0.3)	6.3 (0.2)
	T^2	10.6 (1.1)**	61 (13.7)**	84 (4.0)*	2.3 (0.2)**	5.1 (0.2)**
Failed	T^1	9.3 (0.9)	102 (19.9)	100 (6.1)	3.5 (0.2)	6.5 (0.2)
	T^2	9.5 (1.0)	66 (14.5)*	91 (5.0)*	2.5 (0.3)*	5.6 (0.5)

Conclusion No single measure predicted failure to respond to metronidazole. However, all patients showing a rise in both WCC *and* CRP after 3 days of metronidazole failed treatment (PPV 100%). This simple predictive combination needs confirmation in a validation cohort, but should alert clinicians to the need for prompt escalation of therapy

Disclosure of Interest None Declared.

PTH-011 POLYPECTOMY MAY LEAD TO INADEQUATE SURVEILLANCE OF PATIENTS WITH A FAMILY HISTORY OF COLORECTAL CANCER

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Introduction Surveillance colonoscopy and polypectomy in those with a family history of colorectal cancer (CRC) may prevent malignant transformation of adenomatous polyps yet would then attenuate the apparent strength of familial aggregation. This study compares UK and US surveillance recommendations and considers the effect of polypectomy on family history.

Methods We performed a 'proof of principle' study of patients undergoing colonoscopy for 'family history' and polypectomy for large adenomas (=> 1cm) at our trust over an 18-month period. UK and US Surveillance recommendations for a hypothetical first degree relative (FDR) of each patient were calculated. Surveillance recommendations for FDRs were re-calculated assuming that polypectomy had not been performed in our patients and CRC had developed.

Results 14 patients were included with median age 50 years. UK guidelines recommended no screening or once-off colonoscopy for 9/14 FDRs of our sample, while US guidelines recommended at least 5 yearly colonoscopy for all FDRs. The *hypothetical* development of *CRC* in our patients resulted in increased surveillance recommendations for 12/14 hypothetical FDRs under UK guidelines but for only 3/14 FDRs under US guidelines.

Conclusion In those with a family history of CRC, surveillance colonoscopy and polypectomy may attenuate the apparent level of risk to those patients' first degree relatives. US guidelines, which consider CRC and advanced adenomatous polyps as equal familial risk factors, recommend more aggressive surveillance in the kindred of our study sample, yet may be considered excessive. Under UK guidelines CRC risk may be underestimated and recommended surveillance inadequate.

Disclosure of Interest None Declared.

PTH-012 THE IMPACT OF A DEDICATED MDT ON THE MANAGEMENT OF EARLY RECTAL CANCER

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Introduction The management of significant rectal neoplasms and early rectal cancers (ERCa) is vitally dependent on accurate pretreatment assessment and consideration of all therapeutic options. This study analyses the impact of a formal specialist ERCaMDT on investigation and management of ERCa.

Methods Patients with a final diagnosis of pT1 rectal cancer at our unit were identified for two 12-month periods (2006/2011). Data on investigations and therapeutic interventions were collected from prospectively recorded clinical data.

Results 19 patients from 2006 and 24 patients from 2011 were included. In 2006, 21% (n = 4) patients had undergone polypectomy of an unrecognised polyp cancer with 3 positive resection margins. 3 had MRI, none had trans-rectal ultrasound (TRUS) post-procedure with no use of Transanal Endoscopic Microsurgery (TEMS) to assess margin clearance; three undergoing radical resection. In 2011, 17% (n = 4) underwent 'inadvertent' polypectomy but 75% (n = 3) had both MRI and TRUS, with TEMS being used twice to confirm R0 polypectomy. In 2006, 60% (n = 9) lesions undergoing surgical excision had pre-operative MRI and 27% (n = 4) had pre-operative TRUS. Local excision (8 TEMS, 1 per-anal) was used in 60% (n = 9). In 2011, 75% (n = 15) lesions undergoing surgical excision underwent MRI and 85% (n = 17) TRUS. TEMS was initial treatment in 90% (n = 18). 2 patients underwent subsequent resection for adverse pathology and patient choice respectively.

Conclusion We demonstrate an improvement in the investigation of ERCa with implementation of an ERCaMDT and show an decrease in resectional surgery. Where suspicious rectal lesions are encountered, clinicians should be encouraged not to biopsy, and arrange staging via ERCaMDT prior to endoscopic or surgical therapy.

Disclosure of Interest None Declared.

PTH-013 MISSED OPPORTUNITIES FOR COLORECTAL CANCER DIAGNOSIS AND IMPACT ON MEDIUM-TERM SURVIVAL

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Introduction Delays to diagnosis of colorectal cancer (CRC) may impact upon patient outcome. There is an accepted false-negative rate for all endoscopic or radiological investigations, yet clinicians may be falsely reassured by negative findings. This study identifies cases of CRC diagnosed late after negative investigations and determines outcome in this cohort.

Methods A retrospective comparative cohort study was performed. Cases of CRC over a 12-month period were identified. Radiological

PTH-010 Rises In both White Cell Count and Crp at Day 3 Predict Failure of Treatment with Metronidazole in C.Difficile Infection

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