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 CLOSTRODIUM 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 impendent 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 photosensitisers (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 micro-aerophilic 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 (54, CE6 and FS4) 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.

**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 retrospective 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 hemicolecotomy 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**

<table>
<thead>
<tr>
<th>Polyp detection rate (PDR)</th>
<th>Polyp per procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonoscopists with mean CIDS &gt; 2.0</td>
<td>0.52</td>
</tr>
<tr>
<td>Colonoscopists with mean CIDS &lt; 2.0</td>
<td>0.24</td>
</tr>
</tbody>
</table>

**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 colon 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  The ESGE has recommended that patients with C. difficile infection be treated with metronidazole for at least 7 days. In the case of failure, alternative antibiotics are more frequently used. However, the ability of the blood tests performed at the end of the initial treatment to predict failure is unknown.

Aims  To examine the association of white cell count and C-reactive protein (CRP) with antibiotic failure.

Methods  A retrospective database search was performed of all patients admitted to a London hospital with a positive C. difficile ST-14 (cassette strain) infection diagnostic test during 2010. Patients who were treated with metronidazole for at least 7 days were included in the analysis.

Results  Of the 142 eligible patients, complete data were available for 91 patients. The mean age of the patients was 67.9 years. In 67 patients, metronidazole treatment was discontinued due to failure to respond and in 24 patients, it was completed successfully. There were no significant differences in age, gender, colon abnormalities, or grade of C. difficile infection between the two groups.

Conclusion  A white cell count > 13 × 10⁹/L at day 3 was associated with metronidazole failure, OR 3.89 (95% CI 1.35–11.3) (p = 0.01). There was a trend for an association of CRP > 10 mg/L at day 3 with metronidazole failure, OR 2.62 (95% CI 0.95–7.19) (p = 0.06).

Disclosure of Interest  None Declared.
**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 (T1) and after 3 days (T2) 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 T1 and T2; however, neither WCC and Bristol stool score did not fail 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 T1 and T2 were 67% and 57%, with NPV 78% and 65% (accuracies 72% and 65%), respectively. However, PPV and NPV for treatment failure of increases in both WCC and CRP between T1 and T2 were 100% and 62% (accuracy 75%).

**Table.** Mean (SEM); *p < 0.05, **p < 0.001 from T1

<table>
<thead>
<tr>
<th></th>
<th>WCC</th>
<th>CRP</th>
<th>Pulse</th>
<th>Stool frequency</th>
<th>Bristol score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cured</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>13.2 (1.5)</td>
<td>113 (20.8)</td>
<td>95 (5.0)</td>
<td>3.6 (0.3)</td>
<td>6.3 (0.2)</td>
</tr>
<tr>
<td>T2</td>
<td>10.6 (1.1)**</td>
<td>61 (13.7)**</td>
<td>84 (4.0)**</td>
<td>2.3 (0.2)**</td>
<td>5.1 (0.2)**</td>
</tr>
<tr>
<td><strong>Failed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>9.3 (0.9)</td>
<td>102 (19.9)</td>
<td>100 (6.1)</td>
<td>3.5 (0.2)</td>
<td>6.5 (0.2)</td>
</tr>
<tr>
<td>T2</td>
<td>9.5 (1.0)</td>
<td>66 (14.5)*</td>
<td>91 (5.9)*</td>
<td>2.9 (0.3)*</td>
<td>5.6 (0.5)</td>
</tr>
</tbody>
</table>

**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.

**Abstract PTH-010**

**Table 1**

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