PTH-005 VERIFYING PATIENT REPORTED FAMILY HISTORY IN THE COLORECTAL FAMILY HISTORY SCREENING CLINIC (CFHSC)

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Introduction National Colorectal Family History Screening guidelines categorise risk based on incidence of familial cancer, type of cancer, age and genetic proximity. High and Medium risk patients are recommended regular or one off screening colonoscopies. Appropriate assessment of risk involves obtaining detailed, relevant and accurate family history information. Incorrect assessment of risk can result in High/Medium risk patients not receiving tests or Low risk patients being subjected to unnecessary invasive and costly colonoscopies. The majority of asymptomatic referrals to the Nurse led CFHSC are from primary care. The family history information supporting referral provided by GP's is non-standardised. Data provided can often be inaccurate for such reasons as; patients quote the wrong types of cancer, do not relate non bowel associated cancers, mistaking other benign bowel disorders for malignant disorders, and include distant family or family beyond age thresholds. The CFHSC expends significant resource in improving the accuracy and relevance, with respect to guidelines, of the family history information. This is done via a patient questionnaire then verification against medical records and cancer registry. This study aims to quantify the benefits of this verification process.
Methods All consecutive GP referrals from Jan 2012 to end of Dec 2012 to the Nottingham Nurse led CFHSC were included in this study. Risk based on the family history data was assessed at three sources; based purely on GP information, based on patient questionnaire and finally following verification with the cancer registry and medical notes. Performance of GP referral and patient reported information was compared with the verified history using Chi Squared test.
Results 54 patients were included in the study. Using GP referral information alone categorised 12 high, 12 upper moderate, 30 lower moderate and no low risk of familial colorectal cancer. Using the patient reported family history screening questionnaire data resulted in 10 high, 11 upper moderate and 29 lower moderate and 4 low risk patients. Final verification with medical records resulted in 8 high, 9 upper moderate, 27 lower moderate and 10 low risk patients. Thus there was a significant reduction in number of colonoscopies required following verification of the family history with 10 (18.5%, Chi Squared 11.4, $p < 0.01$) patients no longer requiring a colonoscopy based on their confirmed family history data compared with the GP history.
Conclusion The verification process adds significant value in reducing patient risk and preventing unnecessary screening procedures with an overall 18.5% reduction in colonoscopies requested compared to relying solely on the GP history.
Disclosure of Interest None Declared.

PTH-006 EFFECT OF MEDICATION USE ON FAECAL OCCULT BLOOD TEST POSITIVITY IN THE NHS BOWEL CANCER SCREENING PROGRAMME

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Introduction Faecal occult blood test (FOBt) positivity is linked with both tumour site and gender. Left sided cancers, and cancers in men are detected in significantly greater proportions by screening. The aim of this study was to evaluate for an association with certain medication use at time of test, with the FOBt result, in patients diagnosed with a colorectal cancer.
Methods Using a regional colorectal cancer dataset (Northern Colorectal Cancer Audit Group) and Bowel Cancer Screening Programme database, all screen detected and interval cancers (diagnosed after a negative faecal occult blood test, before the next screening round) were identified. Diagnosis date was between April 2007 and March 2010. General Practitioners for each patient were asked to complete a proforma detailing use of hormone antagonists, hormone replacement therapy, anticoagulants, aspirin, non-steroidal anti-inflammatory drugs (NSAIDs), and pre cancer diagnosis cholecystectomy. Medication use within two months of performing a FOBt was deemed positive. Chi-squared and logistic regression analyses were used.
Results Of 514 patients, 346 (67.3%) proformas were returned and suitable for analysis. 120 patients analysed were in the interval cancer group, with 226 in the screen detected cancer group. Between screen detected and interval cancers groups, no difference was found in the use of hormone antagonists, hormone replacement therapy, anticoagulants, and aspirin. Rates of cholecystectomy were equivalent. The use of non-aspirin NSAIDs within two months of test was seen in a significantly greater proportion in the screen detected cancer group (10.6% vs. 4.2%, $p = 0.039$). For the population who used NA-NSAIDs, there was no difference between groups in gender, tumour location, or stage of tumour.
Conclusion The use of NA-NSAIDs around the time of test was associated with a greater rate of positivity of the FOBt. This finding adds to our understanding of factors influencing the positivity of FOB testing, and may be useful in understanding the rates of interval colorectal cancers within the screening programme.
Disclosure of Interest None Declared.

PTH-007 TWO PHASE PHOTODYNAMIC ANTIMICROBIAL CHEMOTHERAPY (PACT) COMBINED WITH GERMINANT THERAPY EFFECTIVELY TREATS CLOSTRIDIUM DIFFICILE AND THEIR SPORES THAT ARE RESISTANT TO ANTIBIOTICS

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Introduction Approximately 20% of patients with *Clostridium difficile (CD)* infection relapse after initially effective treatment. These typically occur 3–10 days after cessation of standard antibiotic therapy with vancomycin or metronidazole. Some patients relapse 2 or even 3 times, each requiring additional courses of antibiotics. The general consensus is that relapse occurs either because *CD* had not been completely eradicated by the antibiotics, or because spores are resistant to killing. Several days post-antibiotics, surviving spores transform into active bacterial forms again which multiply to produce toxins again. This study aimed to combine PACT, which we have shown to be effective against *CD*, with a novel strategy called germinant therapy.
Methods Germinant therapy with two phase PACT was evaluated against the hypervirulent R20291 strain of CD with photosensitisers (PS) we have found to effectively kill CD from earlier studies. Plates containing CD were treated with a single PACT treatment, pre and post germination of quiescent spores with the bile salt taurocholate.
Results PACT effectively killed R20291 at doses > 10 μM after exposure to laser light at 665nm at an intensity of 24 mJ/cm2. However, post PACT treatment of the C. difficile culture with the spore germinant taurocholate showed that 100% of CD spores were resistant to the treatment. Remarkably, it was shown that pre-incubation of CD spores in germination conditions for 30 minutes prior to PACT leads to > 99.9% kill of the initial number of spores permitting the killing of CD in both its vegetative and sporulating form. Moreover, toxicity of taurocholic acid was excluded in HT-29 colon cells.

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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