lack compliance and specificity. The aim of this study was to systematically review the recent literature to identify all published biomarkers for early detection of colorectal cancer and polyps; to summarise performance characteristics of each biomarker and to test if they can be used for designing new screening tests for colorectal cancer.

Methods Literature searches were conducted according to PRISMA guidelines, of Medline, EMBASE and PubMed databases for relevant papers since the most recent systematic review in 2007. The review focused on human studies reporting on early detection of colorectal cancer and/or colorectal polyps using biomarkers. The studies were categorised into faecal, blood or tissue biomarkers and these were then subdivided depending on the category of marker being examined: (1) DNA biomarkers, (2) RNA biomarkers, (3) Protein biomarkers or (4) Other. Our review reported on the sensitivity and specificity of each biomarker, alongside their 95% confidence interval ranges. These values were used in conjunction with disease prevalence to obtain positive and negative predictive values.

Results The search strategy identified 3348 abstracts. 44 papers, describing a total of 9908 participants and examining 67 different tumour markers were included in this review for data extraction and analysis. Overall sensitivities for colorectal cancer detection by faecal DNA markers ranged from 53% to 87% with varying specificities, however, all above 76%. Combining DNA markers increased the sensitivity of colorectal cancer detection to 86%. A 6-gene faecal DNA panel obtained a sensitivity of 68% for adenoma detection with a high specificity of 90%. Canine scent detection of volatile organic compounds had a sensitivity of detecting colorectal cancer of 99% and specificity of 97% on a study of nearly 300 patients. A panel of serum DNA and/or RNA biomarkers provide a sensitivity and specificity above 85% for all stages of colorectal cancer. A serum 4-gene DNA panel of markers has an increased specificity of 91% for adenoma detection.

Conclusion This review has demonstrated that there are several evolving faecal and serum biomarkers that can predict colorectal cancer. When combined into biomarker panels, higher sensitivity and specificities for early detection of colorectal cancer and adenomas are achieved. Further research is required to validate these markers in a well-structured population based study.

Disclosure of Interest None Declared.

PWE-016 PELVIC RADIATION DISEASE – A COMPARISON OF REPORTED SYMPTOMS IN ONCOLOGY AND GASTROENTEROLOGY CLINICS

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Introduction Pelvic radiation disease and consequences of cancer treatment are common. Improved cancer survivorship has increased awareness of these problems but it remains under diagnosed, under investigated and under recognised by physicians. Gastrointestinal side effects are common post pelvic radiotherapy and can have significant impact on a patients quality of life. PRD ranges in severity, from mild self limiting disease through to significant and debilitating symptoms with high morbidity. We assessed the late GI side effect symptoms reported to doctors at oncology clinics and compared them to the symptoms reported to doctors at GI clinic (where the most severe cases are investigated) at our centre.

Methods Patients (n = 295) referred to Velindre NHS Trust with gynaecological, colorectal or urological malignancy between 1st Jan and 30th June 2008 were identified through a pelvic radiotherapy database. Patients who had received radiotherapy and/or brachytherapy as radical or adjuvant treatment were included. Patients treated initially with palliative intent and patients treated for recurrent disease were excluded.

Patients referred to GI clinic at University Hospital Llandough or the via direct access endoscopy service with suspected PRD are entered on a local database. We identified all patients referred prior to 2013 (n = 34).

In both groups we recorded the presenting GI symptoms and the original malignancy and treatment plan.

Results 30.8% of patients seen in oncology clinic experienced late GI side effects post pelvic radiotherapy. Only a small proportion of these were referred to clinic. Of those referred, rectal bleeding and diarrhoea were the predominant symptoms, along with abdominal pain and bloating. Several patients had multiple symptoms.

Conclusion Late GI side effects of pelvic radiotherapy are common, but the number seen in GI clinic are small. PRD varies in severity, but is under referred by oncologists and primary care practitioners, is poorly recognised by Gastroenterologists and often under investigated. Treatment for consequences of cancer therapy exists, and with increased cancer survivorship, focus should be on minimising symptoms, allowing patients to live after cancer, and not merely survive.

Disclosure of Interest None Declared.

Abstract PWE-016 Table 1

Symptom	Rate in oncology clinic (%)	Rate in gastroenterology clinic (%)
Rectal bleeding	8.4	41.1
Abdominal pain and bloating	5.1	26.4
Constipation	4.7	5.8
Diarrhoea	11.9	35.2
Tenesmus	2.4	2.9
Faecal incontinence	3.1	5.8
Nocturnal urgency	0.7	2.9
Urgency	2.3	11.7

PWE-017 SHORT TERM OUTCOMES FOLLOWING THE USE OF SELF EXPANDING METALLIC STENTS IN ACUTE MALIGNANT COLONIC OBSTRUCTION

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Introduction Colonic self-expanding metallic stents (SEMS) may provide prompt relief of acute malignant colorectal obstruction

(AMCO) and are increasingly used either palliatively or as a bridge to surgery (BTS) in patients in whom a definitive surgical approach is unsuitable. We evaluated short-term outcomes of malignant colorectal obstructive patients treated with SEMS in our institution over a 3-year period.

Methods A prospectively maintained database was reviewed to identify all patients who presented to our institution with AMCO between August 2010 and 2013 and who were treated with a SEMS either temporarily or permanently. Additional data was retrieved from chart and pathology reviews. A single colorectal surgeon inserted all stents under both endoscopic and fluoroscopic guidance. Data was analysed using SPSSv21 (SPSS Inc., Chicago, IL, USA) and presented as median (interquartile range). Continuous variables were assessed using analysis of variance. A p value <0.05 was considered statistically significant.

Results Sixteen patients each had a single stent inserted during the study period, either palliatively (n = 11) or as a BTS (n = 5). Their median (IQR) age was 75 (21) years and 12 (75%) patients were males. Most tumours were located in the sigmoid colon (6/16, 37%). The technical and clinical success rates were both 87.5% (14/16) and there were no SEMS-related perforations. The two unsuccessful stenting cases both had metastatic disease and required emergency surgery while five patients with potentially curable disease proceeded to elective resections. There was no procedure-related mortality. There was no difference in the median length of stay (LOS) post SEMS insertion in the palliative group compared to the BTS group [4 (4) vs. 5 (3), p = 0.2]. However, the median (IQR) LOS post acute surgery was longer than elective surgery [45 (30) vs. 14 (8) days, p = 0.018]. All patients in the BTS group were stoma-free post-operatively, while both patients who had emergency surgery ended up with permanent stomas. Finally, the stent complication rate was 6.2% (1/16), secondary to migration in a patient who was stented palliatively. The latter patient did not undergo further attempted stenting as his obstructive symptoms had been alleviated.

Conclusion AMCO poses significant challenges in management due to the frailty of the presenting patients and the high morbidity/mortality rates associated with emergency surgery. Although limited by a small sample size, our study shows that SEMS are a favourable alternative to emergency surgery for the management of AMCO. Further larger scale studies looking at long-term survival and oncological outcomes are awaited.

Disclosure of Interest None Declared.

PWE-018 HSPC1 INHIBITORS POTENTIATE THE EFFECT OF 5-FU IN PRIMARY COLORECTAL CANCER CELL MODEL

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Introduction Colorectal cancer (CRC) is the fourth most common cancer in the UK and was responsible for more than 15,000 deaths in 2011.[1] Less than 50% of patients with Dukes stage C and D survive more than 5 years.[2]

Molecular chaperone Heat shock protein (HSP) C1 is elevated in CRC.[3] HSPC1's client proteins (e.g., HER2, pNF-B, Akt etc.) are involved in key cellular pathways and apoptosis. HSPC1 inhibitors recently showed positive clinical results in breast cancer[4] and non-small cell lung carcinoma.[5] This study aims to explore the effect of combining HSPC1 inhibitors with 5-fluorouracil (5-FU), the mainstay chemotherapy, in CRC.

Methods CRC cell line HT29 were treated with HSPC1 inhibitors 17-DMAG and NVP-AUY922 as single agent and in combination with 5-FU.

Six primary CRC samples were obtained immediately following surgical resection with consent and treated with HSPC1 inhibitors. Four subsequent samples were treated with a combination of HSPC1 inhibitors and 5-FU.

Following treatment, cell metabolism rate and apoptosis were assessed using MTS and caspase-3 assay.

Results In HT29, 17-DMAG was effective in inducing apoptosis and reducing cell proliferation whereas NVP-AUY922 did not. When combined with 5-FU, 17-DMAG showed additive effect.

In primary CRC cells, a 50% reduction in cell metabolism rate was observed in 2/6 samples for 17-DMAG and 1/5 samples for NVP-AUY922. When subsequent primary samples were treated with 5-FU and HSPC1 inhibitors, significant decrease in cell metabolism rate and increase in apoptosis were observed in 1/4 samples.

Conclusion HSPC1 inhibitors are able to potentiate the chemotherapeutic effect of 5-FU in CRC cell line and this result may be replicated in primary colorectal cancer cells obtained from surgical specimen. HSPC1 inhibitors have different mode of actions which is evident in the different response observed in both HT29 and primary cells. In addition, CRC cells have individual response to HSPC1 inhibitors and some were not responsive.

Although a small sample size, this study encouraged our next phase of research combining HSPC1 inhibitors with current chemotherapeutic agents including oxaliplatin and irinotecan. Further studies will also focus on identifying potential biomarkers to select susceptible patients.

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Disclosure of Interest None Declared.

PWE-019 AN EVALUATION OF QUANTITATIVE FAECAL IMMUNOCHEMICAL TESTS FOR HAEMOGLOBIN

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Introduction The NHS Bowel Cancer Screening Programme (BCSP) in England provides biennial screening using a guaiac-based faecal occult blood test (gFOBT) for people aged 60–74 years. The European guidelines[1] recommend use of a quantitative faecal immunochemical test for haemoglobin (FIT) in population screening and the BCSP will replace gFOBT with FIT from 2016. The BCSP Southern Programme Hub (allied with the Guildford Medical Device Evaluation Centre) has evaluated FIT systems to guide future BCSP procurement. Four quantitative FIT systems suitable for population screening were evaluated: HM-JACKarc (Kyowa Medex Co. Ltd., Japan), NS-PLUS C15 Hb (Alfresa Pharma Corp., Japan), OC-SENSOR DIANA (Eiken Chemical Co. Ltd., Japan) and FOB Gold NG (Sentinel CH. SpA, Italy; analysed on a general chemistry analyser, Bio-Majesty, Jeol, Japan).