onset. CT/MRI imaging; urine 5HIAA and plasma chromagranin A (CgA) and toxicities were recorded.
Results 9 (24%) withdrew before 3 months because of toxicity, progressive disease or death. On intention to treat analysis: 1 (3%) had complete response; 1 (3%) partial response; 26 (70%) had at least 3 months of stable disease. The median TTP was 14 months. Median 5HIAA fell from 54 to 29 umol/24h at 6 months (NS) and CgA from 138 to 121pmol/l at 6 months (NS). 38% had WHO grade 1–2 haematological toxicity and 19% grade 3–4. The only other grade 3–4 toxicity was depression in 1 patient and 22% had grade 1–2 depression. Other grade 1–2 toxicities > 10% included flu-like symptoms 24%, fatigue 16%, hypothyroidism 11%, dry skin 14%.
Conclusion Although there is toxicity which affects management in up to 1/3rd of patients the remaining patients tolerated therapy well. IFNα demonstrated efficacy in at least inducing or maintaining stable disease in most patients (76%). The median TTP is at least similar to other molecular targeted therapies. Those patients who were going to be intolerant or progress usually did so within the first 3 months of treatment. It would be appropriate to perform prospective randomised studies utilising IFNα and also better assess quality of life.
Disclosure of Interest None Declared.

PWE-161 SESSILE SERRATED ADENOMAS, UNDER-RECOGNISED ENDOSCOPICALLY AND UNDER DIAGNOSED PATHOLOGICALLY

doi:10.1136/gutjnl-2013-304907.449

[1,*]H Rafferty, [2]P Gill, [1]H Davis, [3]A Bailey, [3]J East, [2]R Chetty, [1,3]S Leedham. *[1]Molecular and Population Genetics, University of Oxford; [2]Histopathology; [3]Translational Gastroenterology Unit, John Radcliffe Hospital, Oxford, UK*

Introduction The serrated pathway of colorectal carcinogenesis is a distinct and important pathway leading to CpG island methylated phenotype (CIMP) carcinomas. These lesions are over-represented in interval cancers and may explain the failure to prevent right-sided cancer with colonoscopy. Hyperplastic polyps (HPs) in the left colon rarely transform whereas proximal serrated adenomas (SSAs) have definite malignant potential and are notoriously difficult to detect endoscopically. There is still uncertainty surrounding the diagnostic criteria and management implications of SSA's, however as pre-malignant lesions it is vital to find, resect and diagnose them. We assessed SSA diagnosis over 4 years in a teaching hospital, and assessed the (epi)genetic mutation burden and expression profile of rectal HPs versus proximal SSAs to see if identifiable molecular differences contribute to their contrasting malignant potential.
Methods We searched the pathology archives from 2009 to 2012 for the diagnosis of serrated adenomas. Cases were reviewed by 2 GI pathologists. Colonoscopic follow up for each case was assessed and compared with new American guidelines [1]. 5 distal HP and proximal SSA samples were obtained endoscopically, individual crypts were dissected and morphogen gene expression analysed. Obtained DNA was assessed for BRAF and KRAS mutation and CIMP status by methylight.
Results There were no serrated lesions diagnosed in 2009 - this was an unrecognised entity in our hospital at the time. Of 486 'hyperplastic' polyps diagnosed in 2009, 60 proximal lesions were reassessed and 19 were confirmed as SSAs. In 2010, 40 cases of SSA were diagnosed, rising to 84 in 2011 and 130 in 2012. Follow up of SSAs was appropriate in the majority of cases but lesions aberrantly denoted as hyperplastic in 2009 did not all have follow up arranged at the time. Molecular assessment showed a significant difference in (epi)mutation burden and morphogen gene expression between distal hyperplastic polyps and proximal SSA's.
Conclusion In our hospital there was no distinction made between hyperplastic and serrated lesions prior to 2010. A 3-fold increase in SSA diagnosis in the following 3 years reflects improved endoscopic detection and pathologist recognition of these lesions. The molecular difference between distal HPs and SSAs underpins the proximal predilection of CIMP cancers, and may reflect underlying differences in colonic regional microenvironment, microbiome or morphogen balance. Improved recognition of subtle endoscopic and morphological characteristics of SSAs by gastroenterologists and pathologists will improve colonoscopic surveillance.
Disclosure of Interest None Declared.

REFERENCE

1. Rex DK *et al. Am J Gastroenterol* 2012; 107(9):1315–29.

PWE-162 CONCURRENT COMPUTERISED TOMOGRAPHY CAN OPTIMISE THE DETECTION OF CANCER IN PATIENTS PRESENTING WITH UNEXPLAINED ANAEMIA

doi:10.1136/gutjnl-2013-304907.450

[1,*]J Bains, [1]S Mansukhani, [1]S Coates, [2]D J Pinato, [1]M A Mendall. *[1]Gastroenterology, Croydon University Hospital, london; [2]ICTEM, Imperial, London, UK*

Introduction Active investigation for gastrointestinal (GI) cancers is often triggered by "alarm symptoms"; features in the clinical presentation that may predict malignancy and warrant urgent referral. Unexplained anaemia (UA) is a highly prevalent presentation. The BSG guidelines recommend only upper GI endoscopy (OGD) and colonoscopy (COL). We investigated the additional diagnostic value of concurrent contrast enhanced computerised tomography of the chest, abdomen and pelvis (CT) in the investigation of patients (pts) aged > 50 referred to the urgent suspected cancer (USC) pathway for GI malignancies. We evaluated its accuracy in detecting upper GI, lower GI and extraluminal malignancies in a cohort of consecutive pts presenting with and without UA.
Methods We retrospectively analysed characteristics and outcomes of 350 consecutive GI USC referrals (07/2010–07/2012): 200 (Group A) presented with UA and were investigated with OGD (178, 89%), COL (70, 39%) and CT (157, 78%, with 138, 87% aged > 50 years). The diagnostic outcomes were compared with a second group of 150 pts (Group B) referred with alarm symptoms (unintentional weight loss, abdominal pain, progressive dysphagia) who underwent OGD (91, 60%), COL (32, 21%) and CT (139, 93%, with 121, 89% aged > 50 years).
Results Group A had a mean age of 70 years (range 22–96), 51% males, mean haemoglobin (Hb) of 10.2 (5–13.8) g/dL. Pts in Group B had a mean age of 67 years (range 20–92), 60% males, mean Hb 13.9 (11.5–17.5) g/dL. Malignancy was diagnosed in 38 (19%) Group A and 17 (12%) Group B patients ($p = 0.07$). The proportion of malignant cases diagnosed endoscopically was not different across the studied groups (4/176, 2% and 7/86, 8% for OGD and COL in Group A; 5/91, 6% and 3/32, 9% in Group B, $p = 0.3$). Conversely, the rate of incident cancers identified by CT favoured Group A (33/157, 21% vs. 10/139, 7%, $p < 0.001$), where 71% of the incident cancers were extraluminal and diagnosed in pts > 50 (29/33, 87%).
Conclusion Concurrent CT can optimise the detection of malignancy in pts over the age of 50 referred under the GI USC pathway, with subjects presenting with unexplained anaemia achieving the greatest diagnostic benefit. We therefore propose that CT should be incorporated within the routine investigation pathway of anaemia in the over 50s.
Disclosure of Interest None Declared.

PWE-163 CHEMR23 AND BLT1 RECEPTOR EXPRESSION IN COLORECTAL CANCER

doi:10.1136/gutjnl-2013-304907.451

[1,*]J M Hutchinson, [1]M Volpato, [2]P Loadman, [3]A Nicolaou, [1]M Hull. *[1]Molecular Gastroenterology, Leeds Insitute of Molecular Medicine, Leeds; [2]Institute of Cancer Therapeutics; [3]Bradford School of Pharmacy, University of Bradford, Bradford, UK*

Introduction Eicosapentaenoic acid (EPA) is an omega-3 polyunsaturated fatty acid which has anti-colorectal cancer (CRC) activity. The molecular mechanism (s) underlying the anti-neoplastic activity of EPA are not understood. Trihydroxy-EPA, also known as Resolvin E1 (RvE1), is an oxygenated derivative of EPA, that has been shown to inhibit NK-κB signalling, which is implicated in colorectal carcinogenesis. RvE1 has been shown to bind to two G-protein coupled receptors, ChemR23 and BLT1. We investigated whether ChemR23 and BLT1 receptors are expressed in human CRC.

Methods Seven human CRC cell lines (HCA7, LoVo, T84, HRT18, HT29, Caco2 and HCT116) were characterised for ChemR23 and BLT1 expression by quantitative real-time polymerase chain reaction, western blotting and immunofluorescence. Jurkat and THP-1 cells were used as positive controls for ChemR23 and BLT1, respectively. Membrane protein fraction analysis was carried out using a transmembrane protein extraction kit. Densitometric analysis was performed using BIO-RAD Quantity One Software. Human CRC tissue was examined for ChemR23 expression by immunohistochemistry on formalin-fixed, paraffin-embedded tissue blocks.

Results ChemR23 and BLT1 messenger RNA expression was detected in all seven human CRC cell lines. ChemR23 protein (45kDa) expression was also observed in all human CRC cell lines, with Caco2 cells expressing around two-fold more ChemR23 receptor protein relative to a-tubulin than other CRC cell lines. However, BLT1 receptor protein was not detected in any of the human CRC cell lines, but was confirmed in monocytic THP-1 cells (38kDa). ChemR23 protein was enriched in the membrane protein fraction of Caco2 cells. ChemR23 protein levels increased with confluency in Caco2 cells. There was a three-fold increase in ChemR23 protein expression in 100% confluent Caco2 cells compared with less confluent cell cultures. In contrast, HCA-7 cells did not display confluence-dependent changes in ChemR23 protein expression. Immunofluorescence demonstrated predominant cytoplasmic localisation of ChemR23 with a heterogeneous population of ChemR23-expressing and negative cells. ChemR23 immunohistochemistry on primary CRC tissue demonstrated homogeneous ChemR23 immunoreactivity in CRC cells with some stromal cell staining, including endothelial cells.

Conclusion ChemR23 (but not BLT1) protein is expressed by human CRC cells (particularly Caco2) *in vitro* and in cancer cells in human primary CRCs. ChemR23 protein expression varies *in vitro* in a confluence-dependent manner, with heterogeneous expression by Caco2 cells. ChemR23 is localised predominantly in cancer cells in human CRC. Investigation of ChemR23-dependent anti-CRC activity of RvE1 is warranted.

Disclosure of Interest None Declared.

PWE-164 UTILIZING INTEGRATIVE GENOMIC ANALYSIS AND PROTEOMICS TO DECIPHER THE BIOLOGY AND THERAPEUTIC POTENTIAL OF TRIM44 IN OESOPHAGEAL ADENOCARCINOMA AND BREAST CANCER

doi:10.1136/gutjnl-2013-304907.452

[1,*]J C Ong, [2]N Shannon, [3]J Skehel, [1]K Wang, [2]O M Rueda, [1]C E Walker, [4]R Hardwick, [2]C Caldas, [1]R C Fitzgerald. *[1]Hutchison-MRC Cancer Cell Unit; [2]Cambridge Research Institute; [3]Medical Research Council Laboratory of Molecular Biology; [4]Cambridge Oesophagogastric Centre, Cambridge, UK*

Introduction The incidence of oesophageal adenocarcinoma (OAC) has quadrupled in the last 30 years and outcomes remain poor. We have previously identified TRIM44 as an independent prognostic gene commonly amplified in OAC and breast cancer. However, the exact biology of TRIM44 and its role in epithelial cancers remain unclear

Methods Gene set enrichment analysis (GSEA) was performed on gene expression microarray data of oesophageal (n = 146) and breast cancers (METABRIC, n = 1980) to identify signalling pathways activated by TRIM44 amplification and overexpression. Mass spectrometry was used to identify binding partners of TRIM44 in both endogenous and overexpression settings. Validation of the mass spectrometry results were performed using reciprocal co-immunoprecipitations experiments

Results GSEA performed on OAC samples identified 14 pathway signatures that were significantly enriched with TRIM44 overexpression. To validate these results, GSEA was performed on the METABRIC dataset and this revealed that the PI3K-AKT-mTOR signalling was the only pathway out of the 14 identified signatures to be significantly overenriched in samples with TRIM44 amplification in OAC and breast cancer ($p < 0.05$). Mass spectrometry of immunoprecipitated TRIM44 identified 2 novel binding partners of TRIM44 -- a ring finger protein associated with activation of c-jun and a tumour metastatic gene shown to directly activate the PI3K-AKT-mTOR signalling pathway. Validation of these two binding partners was successfully performed with endogenous co-immunoprecipitation of TRIM44 in HSC-39, a cell line with high level amplifications of TRIM44; demonstrating that both binding partners associate with TRIM44 in the endogenous setting.

Conclusion Integrative genomic analysis and GSEA provided an insight into the pathways activated by TRIM44. The mTOR pathway was consistently associated with TRIM44 amplification and overexpression. A proteomics approach identified two potential mechanistic explanations how TRIM44 activates the mTOR pathway. Clinically, these findings open up the possibilities of using mTOR inhibitors or peptides disrupting TRIM44 protein interactions to treat TRIM44 amplified tumours.

Disclosure of Interest None Declared.

PWE-165 CERVICAL NEOPLASIA IN LOW RISK WOMEN WITH INFLAMMATORY BOWEL DISEASE ON COMBINATION OF INFLIXIMAB AND THIOPURINES

doi:10.1136/gutjnl-2013-304907.453

[1,*]J Woo, [1]L Carter, [1]S Mann. *[1]Dept of Gastroenterology, Barnet Hospital, London, UK*

Introduction Women with inflammatory bowel diseases (IBD) may have increased rates of pre-malignant lesions in the uterine cervix compared to age and sex matched controls (1.2). European guidelines recommend regular gynaecological screening for women with IBD, especially if they are on immunomodulators (3). However protocols in the UK are lacking and cervical screening is often underutilised by gastroenterologists. We describe 3 cases of cervical neoplasia in patients who had none of the usual risk factors other than prior use of Infliximab (IFX) and azathioprine.

Methods Three patients on maintenance treatment with IFX for IBD have recently presented unexpectedly with high grade cervical dysplasia or cancer to the gynaecologists. We have summarised their clinical history and reviewed their risk factors for development of cervical neoplasia.

Results Case 1: 31-year-old lady with extensive small bowel Crohns disease on azathioprine received IFX for 11 months and developed adenocarcinoma of the cervix 8 months after stopping IFX. She required a radical hysterectomy. Case 2: 30-year-old lady with ileocolonic Crohn's disease on azathioprine received IFX for 3 years and developed high grade cervical intra-epithelial neoplasia 2 months after stopping IFX. She required a large loop excision of the transformation zone (LLETZ). Case 3: 32-year-old lady with colonic and perianal Crohn's disease on azathioprine received IFX for 1 year and then developed high grade cervical intra-epithelial neoplasia 1 month later. She also required a LLETZ procedure. All three patients had also previously been steroid dependent. They were all in long-standing monogamous relationships, were non-smokers and had one or no pregnancies.

Conclusion It is suggested in the literature that women with IBD have an increased risk of cervical neoplasia. It is possible that