significant area of unmet clinical need and reduce associated morbidity and healthcare costs.

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PWE-049 ASSESSMENT OF RESPONSE AND TOLERANCE TO ORAL IRON SUPPLEMENTS IN PATIENTS WITH ANAEMIA

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Introduction Iron deficiency anaemia (IDA) is associated with “classical” signs and symptoms such as pallor and koilonychia. Tolerance to oral iron supplements is variable.

Aim We recorded the classical signs and symptoms of iron deficiency in patients presenting to 2 week wait IDA clinic. We also assessed patients’ tolerance to oral iron supplements and subjective response.

Patients and methods Patients referred to our iron deficiency clinic were assessed for symptoms and signs of iron deficiency using a proforma. All patients were started on oral ferrous sulphate 200 mg twice daily. Clinical response and tolerability were assessed at 1 and 3 months.

Results There were 336 patients with iron deficiency anaemia and 58 patients with other types of anaemia, mainly anaemia of chronic disease. There were no differences in baseline characteristics between the two groups.

In patients with IDA, the most frequent symptoms of iron deficiency were pallor (42.9%), hair loss (16.4%), less commonly ridges (3.0%), glossitis (1.5%), koilonychia (0.9%) or cheilosis (0.6%). Patients responded to iron supplements and

reported reduction in fatigue. Most frequently reported side effects related to oral iron supplements were black stools (66.8%), diarrhoea (20.0%), constipation (20.6%), pruritus (20.0%), abdominal discomfort (20.0%) and nausea (11.1%). 11.1% patients with IDA required dose adjustment or intravenous supplements.

Interestingly, patients in the group of “other” types of anaemia presented symptoms of iron deficiency. Side effects or oral iron supplements were also similar. (See Table below for detail.) 15.5% of patients required dose reduction or intravenous supplements. However, here was only little response in blood test results although subjective fatigue score improved.

Conclusion Iron supplements are well tolerated in patients with anaemia. Their use in patients with no evidence of iron deficiency however is of modest clinical benefit.

PWE-050 ESTABLISHING THE NORMAL FAECAL METABOLOME THROUGH ANALYSIS OF VOLATILE ORGANIC COMPOUNDS FROM HEALTHY ADULTS

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Introduction Volatile organic compounds (VOCs) are produced in the faeces through the action of the microbiome on gut contents. Specific changes in faecal VOCs are associated with disease such as colon cancer¹, IBS² and IBD³. Their role in health is not clearly defined. VOCs can be analysed using analytical techniques such as gas chromatography – mass spectroscopy (GC-MS). In order to interpret abnormal VOC profiles in disease states, we must have a better understanding of what is normal.

Method Data from 10 faecal VOC studies carried out in our lab, between 2015 and 2018, involving 91 healthy participants were amalgamated. All samples were collected and stored in the same conditions, samples were analysed by headspace GC-MS using our optimised protocol⁴. Spectral analysis was performed with Automated Mass Spectral Deconvolution and Identification System (AMDIS) and the National Institute of Standards and Technology (NIST). Further data processing was carried out using Metab in R, Microsoft Excel and Metaboanalyst.

Abstract PWE-050 Table 1 VOCs found in >90% of samples

(4R)-1-methyl-4-prop-1-en-2-ylcyclohexene

2-methylbutanal
2-methylbutanoic acid
3-methylbutanal
3-methylbutanoic acid
3-methylsulfanylpropanal
4-methylphenol
6-methylhept-5-en-2-one
Heptan-2-one
Nonan-2-one
Pentanoic acid
Phenol
Propanoic acid

Abstract PWE-049 Table 1

	Iron Deficiency Anaemia n 336		Other types of anaemia n 58	
Symptoms of iron deficiency	144 (43.0%)		33 (36.0%)	
Pallor n (%)	55 (16.5%)		15 (16.3%)	
Hair loss n (%)	10 (3.0%)		3 (3.3%)	
Ridges n (%)	5 (1.5%)		1 (1.1%)	
Glossitis n (%)	3 (0.9%)		1 (1.1%)	
Koilonychia n (%)	2 (0.6%)		1 (1.1%)	
Cheilosis n (%)				
Side effects on oral iron supplements	133 (66.8%)		43 (74.1%)	
Black stools n (%)	40 (20.0%)		15 (26.0%)	
Diarrhoea n (%)	41 (20.6%)		13 (22.4%)	
Constipation n (%)	40 (20.0%)		14 (24.0%)	
Pruritus n (%)	40 (20.0%)		9 (15.5%)	
Abdominal discomfort n (%)	22 (11.1%)		6 (10.3%)	
Nausea n (%)				
Improvement in fatigue Liskert scale (mean)	Baseline	At 3 months	Baseline	At 3 months
	48.2	61.4	50.0	58.6
Improvement in Haemoglobin (g/dL) Haemoglobin g/dL (mean)	Baseline	At 3 months	Baseline	At 3 months
	109.1	129.2	109.0	118.4

n (total number of patients), NS not significant

Results In total 289 VOCs were found. The median number of VOCs identified per sample was 85 (3–18). Esters formed the largest group of compounds identified (n=82) with a mean of 17 (–3) esters per sample.

Three compounds were identified in all participants; Butanoic acid, 2-phenylacetaldehyde and 1H-indole. Thirteen compounds were present in > 90% of samples, 11 were present in >80% and a further 9 were seen in > 70%. This included; 10 aldehydes, 7 acids, 7 ketones, 4 benzenoids, 4 alicyclic compounds, 2 alcohols, 1 alkane and 1 alkene. Of these, 1 compound has previously been identified only in saliva; (1R,2R,4S)-1-ethenyl-1-methyl-2,4-bis(prop-1-en-2-yl)cyclohexane: it was found in 76 faecal samples.

Conclusion We the “core” compounds VOC profile of healthy^{4,5} have amalgamated data from different laboratories, using different techniques, sample handling and spectral analyses. comprehensive list of VOCs from a large set of donors which all underwent the same analysis in one lab.

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PWE-051 THE ASSOCIATION OF TOLL-LIKE RECEPTOR (TLR) PATHWAY POLYMORPHISMS AND COLORECTAL CANCER RISK: A META-ANALYSIS

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Introduction Colorectal cancer (CRC) is the third commonest cancer worldwide. Approximately 35% of CRC risk is due to heritable factors but only 5% attributed to known syndromes. Single Nucleotide Polymorphisms (SNPs) are common, low penetrance gene variants that may contribute to the remaining heritable risk. The toll-like receptor (TLR) signalling pathway is a key mediator of inflammation and has unique roles in the gut due to the presence of commensal microbiota. It is also suggested to have a significant role in colorectal carcinogenesis. This systematic review and meta-analysis aims to investigate the association of polymorphisms in the TLR signalling pathway with CRC.

Methods A systematic literature review of Pubmed, Ovid MEDLINE and HuGENet databases was conducted. Specific inclusion and exclusion criteria were used to select relevant papers. A per-allele, pooled odds ratio was used to assess the risk of each variant. Heterogeneity was investigated using Cochrane's Q test and I². Publication bias was assessed through funnel plot asymmetry. Statistical analysis was conducted using the Metafor package in R.

Results Sixty-seven SNPs were identified in published literature in 14 TLR pathway genes associated with CRC risk, of which 12 SNPs in five genes were eligible for meta-analysis. Two SNPs showed a significant association with CRC risk: *TLR4* rs7873784 (Odds ratio = 1.356, p=0.011, 95% C.I. 1.0–.71) and *TLR4* rs5030728 (Odds ratio = 0.916, p=0.025, 95% C. I. 0.8–.99). Funnel plots demonstrated no evidence of publication bias.

Conclusions The TLR pathway is a potential target for CRC therapy and risk assessment. This study identifies two SNPs in the *TLR4* gene associated with CRC risk. In order that conclusions might be made about the role of this pathway in colorectal carcinogenesis, adequately powered studies of greatly increased population size must be conducted.

PWE-052 COLORECTAL NEOPLASIA IN SIERRA LEONE – WE WILL ONLY FIND IF WE LOOK

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Background There has been an historical assertion that adenomatous polyps and colorectal cancer are rare in Africa, and particularly sub Saharan Africa. The reasons have been felt to be due to the African diet being ‘protective’(1). More recently, this view has been questioned as various publications have reported finding of adenomas and carcinomas (2). An explanation put forward is that there has been a ‘westernisation’ of the African lifestyle and diet. However there may be a more obvious reason – facilities and access to endoscopic evaluations have been poor and therefore, patients have not had access to these, so are not diagnosed.

Methods Since 2016, a group of gastroenterologists from Trusts in Northeast UK (all UK certified bowel cancer screeners) have visited Freetown annually to train doctors to perform gastroscopy. Prior to this there were no formalised endoscopy services in the country.

The local partners suggested that bowel cancer screening could be offered to individuals for a fee on 2 days of each UK team visit if they wished to have this performed. Fees were used to raise funds towards continuing the training project. Patients were identified prior to the UK team arriving, and information leaflets on the procedure and low residue diet were sent by email. Procedures were performed at Choi-thram Memorial Hospital.

Results 12 patients attended for colonoscopy. Only one of these was a screening procedure, with 11 presenting with lower GI symptoms. 8 were male. Colorectal neoplasia was detected in 7 cases (58%). Table 1 shows details of patients in whom adenomas or cancers were detected.

Abstract PWE-052 Table 1

Age	Gender	Symptom	Lesion	Site
45	F	PR bleed	adenoma	HF
66	M	Anaemia; Abdo pain	adenoma	1 x SC; 1 X DC
56	M	PR bleed; Abdo pain	adenoma	AC
71	M	Asymptomatic screening	adenoma	SC
68	M	PR bleed	cancer	SC
52	F	Anaemia; abdo. pain	cancer	Transverse
78	F	PR bleed; anal pain	cancer	Rectum

HF-hepatic flexure; SC – sigmoid colon; DC- descending colon; AC- ascending colon

Conclusion This small series further adds to the increasing literature suggesting that colorectal neoplasia is not a rare