

PWE-082 ARE SCREEN TESTED FOBT +VE SUBJECTS FOUND TO HAVE COLORECTAL CANCER ASYMPTOMATIC?

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Introduction The National Bowel Cancer Screening Programme (NHSBCSP) aims to reduce mortality from bowel cancer in a defined population, by detecting cancer in asymptomatic individuals between 60 and 74 years. Current Government strategies are aimed at raising awareness of symptoms, to bring survival from cancer in England up to the average for Europe.¹ This study aims to identify whether individuals with a FOBT +ve screening test are asymptomatic?

Methods Data were extracted from the Bowel Cancer Screening System (BCSS) on FOBT +ve individuals diagnosed with cancer from commencement of the programme in 2006 to December 2011. This included all symptoms (one or more) reported at colonoscopy pre assessment, as captured by BCSS. The same data were extracted on a control group of FOBT +ve, colonoscopy negative individuals. In addition to examining trends in reported symptoms, data sets were also interrogated to look at those significant symptoms that if reported prior to the screening episode should have triggered a cancer two week wait (2WW) referral.²

Results 10211 patient episodes with cancer (Male=6825, Female=3837) and 30249 without cancer (Male=14991, Female=15259) were included in the analysis. Symptom data could not be verified with regard to recency, frequency or severity of symptoms or whether previously reported. Anxiety caused by a +ve screening test may itself heighten awareness of some symptoms however, the percentage reporting significant symptoms¹.

Conclusion Although the NHSBCSP aims to detect asymptomatic cases, a large proportion of individuals were symptomatic at the time of screening, some were eligible for referral under the DH guidance for high risk symptoms of colorectal cancer. The Government's drive to increase awareness of symptoms is necessary to prompt individuals to seek medical advice at an earlier stage. Standardising how data are captured at pre assessment will improve the quality and usefulness of the data strengthening future analysis on the impact of awareness campaigns on screening.

Abstract PWE-082 Table 1 Frequency of reported symptoms

Symptom	Cancer (%)	Normal (%)
None	926 (9.07)	4377 (14.47)
Frequency	2711 (26.55)	5083 (16.80)
Diarrhoea	2245 (21.99)	7049 (23.30)
Rectal bleeding	5636 (55.20)	13266 (43.86)
Rectal bleeding without anal irritation*	3654 (35.78)	7534 (24.91)
Urgency	2551 (24.98)	7667 (25.35)
Mucus	1571 (1.54)	3751 (12.40)
Weight loss	1333 (13.05)	3801 (12.57)
Frequency and diarrhoea and urgency*	606 (5.93)	1321 (4.37)

*Significant symptoms.

Competing interests None declared.

¹Making them eligible for referral as a cancer 2WW is higher in those FOBT +ve individuals found to have cancer at screening colonoscopy than in those with FOBT +ve negative colonoscopy.

REFERENCES

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PWE-083 BUCCAL CELLS AS A POTENTIAL SURROGATE FOR DNA METHYLATION BIOMARKER TO IDENTIFY THOSE AT INCREASED COLORECTAL CANCER RISK

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Introduction Colorectal cancer (CRC) screening programmes are an opportunity to alter the survival of patients with early CRC. Cells from the alimentary tract can be obtained from both the mouth and large bowel. If biomarkers of CRC risk could be identified in buccal cells, such assays could be more convenient and acceptable than those requiring rectal biopsies. One potential CRC risk biomarker is methylation of the WNT-related gene encoding the Secreted Frizzled Related Protein 4 (*SFRP4*).

Methods DNA was extracted from macroscopically normal rectal biopsies and matched buccal cell swabs from volunteers at a relatively lower (healthy volunteers) and higher (patients with adenomatous polyps) CRC risk in the BORICC Study. Methylation of *SFRP4* was quantified by Pyrosequencing.

Results *SFRP4* promotor methylation was quantified in rectal biopsies and matched buccal cells in 233 lower and 89 higher CRC risk participants. For rectal biopsies, *SFRP4* promotor methylation was significantly ($p=0.001$) higher in those with polyps than in healthy controls. However, for buccal cells, the reverse was observed with significantly ($p<0.001$) higher *SFRP4* promotor methylation in the healthy controls. At CpG sites 1 and 4 only, *SFRP4* methylation was correlated significantly ($p=0.001$ and $p=0.041$ respectively) between the two patient groups.

Conclusion *SFRP4* promotor methylation in rectal biopsies is not the same as that in matched buccal cells. However, *SFRP4* methylation was significantly different between patient groups at each site, providing encouragement for further studies of the utility of buccal cells as a surrogate tissue for identification of those at increased CRC risk.

Competing interests None declared.

PWE-084 SECRETED FRIZZLED RELATED PROTEIN 4 (SFRP4) AS AN EPIGENETIC BIOMARKER OF COLORECTAL CANCER RISK

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Introduction Colorectal cancer (CRC) is the 3rd most common cancer in the UK. There is a lack of robust biomarkers of CRC risk which could act as surrogate endpoints for studies investigating modifiers of CRC risk. Epigenetic changes (aberrant DNA methylation marks) in the WNT-related Secreted Frizzled Related Protein 4 (*SFRP4*), a gene whose expression is down-regulated early in CRC development, may be a potential biomarker of CRC risk. Such epigenetic changes occur early in tumorigenesis and may contribute causally to CRC progression. In addition, they may respond to diet and other lifestyle determinants of CRC risk.

Methods DNA was extracted from macroscopically normal mucosal biopsies from the rectum of volunteers at a relatively lower (healthy volunteers) and higher (patients with adenomatous polyps) CRC risk in the BORICC Study. Methylation of *SFRP4* was quantified by Pyrosequencing and data were analysed by analysis of variance.

Results *SFRP4* promoter methylation was quantified in 253 biopsies from lower and 96 biopsies from higher CRC risk participants.

Methylation of the *SFRP4* promoter was significantly ($p=0.001$) greater in biopsies from those at higher CRC risk. In addition, increasing age (a strong modulator of CRC risk) was significantly ($p<0.001$) associated with increased *SFRP4* methylation.

Conclusion This study showed that *SFRP4* methylation is significantly greater in macroscopically normal rectal biopsies from those at higher CRC risk. This aberrant epigenetic mark may be causal for CRC risk and further studies are needed to investigate whether methylation of *SFRP4* is reversible by dietary and other interventions.

Competing interests None declared.

PWE-085 AGE-RELATED CHANGES IN DIVERTICULAR DISEASE ADMISSIONS IN SCOTTISH HOSPITALS 2000–2010

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Introduction Recent studies suggest that acute admissions for diverticular disease (DD) are increasing in younger age groups. Verification of this trend in Scotland and examination of treatment patterns by age will help in the understanding of DD and may establish better hospital treatment pathways for DD patients.

Methods The Scottish Morbidity Record (SMR01) Linked Database was utilised to extract data on hospital admissions with a primary diagnosis of DD (ICD-10 code K572-K579) from 2000 to 2010. These were categorised into three treatment groups: diagnostic (investigational), medical (ie, receiving medical therapy only) and surgical (ie, having an operation). For each group, the incidence of admissions was determined by year of admission and then stratified by age (<45, 45–54, 55–64, 65–74, 75–84 and 85+ years). Proportions of admissions by age group were determined.

Results Admissions for DD increased from 6591 in 2000 to 10 228 in 2010 (55%). The largest numerical increase (2957, 57.1%) was seen in diagnostic admissions, while the greatest percentage change was seen in medical admissions (688, 73.1%). Surgical interventions remained stable (Abstract PWE-085 table 1). There was little difference in the age-related incidence of diagnostic admissions between 2000 and 2010. In patients <55 years, medical admissions increased between 2000 and 2010 (17.6% [166/941] vs 25.7% [418/1629]). The proportion of surgical admissions in patients 55–64 years also increased (19.2% to 28.5%) but decreased in the 65–74 year group (29.1% to 22.9%). There was little change in admission types among other age groups between 2000 and 2010.

Abstract PWE-085 Table 1 DD admission type and age-band—incidence and % of annual admissions 2000 and 2010

Type Year	Diagnostic		Medical		Surgical	
	2000	2010	2000	2010	2000	2010
N	5175	81321	941	1629	475	467
(% change)		(+57.1%)		(+73.1%)		(–1.6%)
<45	193 (3.7%)	275 (3.4%)	34 (3.6%)	158 (9.7%)	41 (8.6%)	41 (8.8%)
45–54	523 (10.1%)	965 (11.9%)	132 (14.0%)	260 (16.0%)	88 (18.5%)	81 (17.3%)
55–64	1057 (20.4%)	1921 (23.6%)	144 (15.3%)	325 (20.0%)	91 (19.2%)	133 (28.5%)
65–74	1682 (32.5%)	2476 (30.4%)	257 (27.3%)	373 (22.9%)	138 (29.1%)	107 (22.9%)
75–84	1337 (25.8%)	2045 (25.1%)	242 (25.7%)	350 (21.5%)	94 (19.8%)	89 (19.1%)
85+	383 (7.4%)	450 (5.5%)	132 (14.0%)	163 (10.0%)	23 (4.8%)	16 (3.4%)

Conclusion DD admissions are increasing in Scotland due to rises in diagnostic and medical admissions. There was no age-related change in the proportion of diagnostic admissions between 2000 and 2010, but there was an increase in DD patients <55 years managed

medically. There appeared to be a shift away from surgery in patients 65–74 years towards those in the age band 55–64 years.

Competing interests H Paterson Grant/Research Support from: Shire Pharmaceuticals Inc, I Arnott Grant/Research Support from: Shire Pharmaceuticals Inc.

PWE-086 POLYP SIZE MEASUREMENTS IN THE BOWEL CANCER SCREENING PROGRAMME

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Introduction Polyp size is a principal factor used to determine surveillance intervals both nationally and internationally, and is an independent risk factor for the malignant potential of colorectal lesions. There is uncertainty regarding the most accurate method of measurement of colonic polyps, between the in situ and post-formalin fixation measurements. This study aims to determine the preferred polyp measurement for use in determining surveillance intervals and compare post-fixation polyp measurements using three different devices.

Methods 107 consecutive colorectal polyps were measured in situ, pre-fixation and post-fixation to the nearest millimetre. Post-fixation measurements were recorded using a metal ruler, callipers and a graduated magnifying lens. One sample t-tests and the Kruskal–Wallis test were used for data analysis.

Results Pre-fixation ruler measurements were significantly higher than both in situ and post-fixation ruler measurements ($p<0.05$). However no significant difference was observed between in situ and post-fixation measurements ($p=0.36$). In situ measurements were associated with a higher rate of surveillance group variation than post-fixation measurements (9.3% vs 5.6%). No significant difference was seen between measurements obtained by the three different devices post-fixation ($p=0.89$).

Conclusion Post-fixation polyp size measurements are associated with lower rates of surveillance variation and may be considered the preferred measurement. On average colonoscopists underestimated polyp size. In the absence of a clinically significant difference between measurement devices, we advise the ruler be used for post-fixation measurements due to its widespread availability.

Competing interests None declared.

PWE-087 COLONOSCOPY DEMAND AND ADHERENCE TO POLYP SURVEILLANCE GUIDELINES

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Introduction Demand for colonoscopy is projected to increase by 5–10% per annum. Many units are struggling to match the demand to existing capacity. A significant proportion of endoscopy unit workload is related to follow-up colonoscopy in patients with a previous history of colorectal adenomas. Non-adherence to the BSG polyp surveillance guidelines could result in either excess demand for colonoscopy or inappropriate delays in diagnosing advanced colorectal neoplasia.

Methods We retrospectively searched the Trust's endoscopy database (catchment population 520 000) to assess our compliance to the