**A DEDICATED COLORECTAL CANCER GENETICS SERVICE IMPROVES ADHERENCE WITH MOLECULAR TESTING FOR LYNCH SYNDROME**

1S Stevens, L Sergot, F Turkes, JM Smith, M Monahan, 2Family History of Bowel Cancer Clinic, West Midlands University Hospital and Imperial College, NHS, London, UK

Introduction Lynch Syndrome (LS) accounts for 2–3% of colorectal cancer (CRC); ~1000 cases of CRC in the United Kingdom annually. It occurs as a result of mutations in DNA repair genes, limiting DNA repair and causing Microsatellite Instability (MSI). Previous studies have demonstrated that in current practice less than 10% of these cases are identified as LS due to a lack of appropriate testing with immunohistochemistry or MSI analysis. The international Revised Bethesda Criteria were devised in 2004 to help identify such cases; these criteria include all individuals diagnosed <50 years of age, those with synchronous or metachronous CRC or LS-related cancer, those with significant family history of CRC or a LS-related cancer, or individuals diagnosed <60 years of age with MSI-type histology.

Methods We identified all new cases of colorectal cancer over a 1 year period prior to and subsequent to the establishment of a dedicated ‘Family History of Bowel Cancer Service’. Adherence to the Revised Bethesda Criteria was determined by examination of medical records and UK National Bowel Cancer Audit Programme (NBOCAP) data. Pathology reports were studied in patients aged under 60 years of age at diagnosis looking for features consistent with MSI-H histology. We used Chi-squared testing to calculate significance for binary variables.

Results Over the two year period 198 cases of colorectal cancer were discussed at the CRC multidisciplinary meeting. 41 patients fulfilled the Revised Bethesda Criteria for screening for Lynch Syndrome; 12 individuals were diagnosed under the age of 50 years (~6%); 4 patients were diagnosed under 60 years of age and had MSI-H type histology and 25 patients had a significant family history of CRC or a LS-related cancer. In the year prior to the introduction of the clinic, we identified 18 cases meeting the Revised Bethesda Criteria for screening for LS; however, only 1 patient had been tested (5.6%). In contrast, following the introduction of the clinic 19 of 25 identified cases (82.6%) were tested. Chi-squared testing demonstrated clinical significance when comparing the screening prior to and subsequent to the introduction of the clinic, p value = 9.7x 10^-7 (Chi = 25.9956). 6 of the screened cases demonstrated molecular features with MSI and abnormal Immunohistochemistry, and are undergoing further germline genetic testing.

Conclusion The establishment of a dedicated ‘Family History of Bowel Cancer Service’ resulted in a significant improvement in the screening for Lynch Syndrome in accordance with the Revised Bethesda Criteria, 2004. We would recommend that this service should be extended throughout the United Kingdom to help aid early diagnoses and improve long-term outcomes.

Disclosure of Interest None Declared.

**MICRONUTRIENT-ANTIOXIDANT SUPPLEMENTATION HAS NO IMPACT ON GASTRIC ATROPHY IN ZAMBIAN ADULTS: A RANDOMISED CONTROLLED TRIAL**

1V Kayamba, M S Chomba, P Kelly, 2Dept Medicine, University Teaching Hospital, Lusaka, Zambia; 3Dept Medicine, UTH, Lusaka, Zambia; 4Blizard Institute, Barts & The London, London, UK

Introduction With the increasing number of gastric cancer cases in young patients in Zambia, we set out to investigate the possibility of reversing gastric atrophy, a precancerous lesion, using micronutrient-antioxidant supplementation in a retrospective analysis of a published randomised controlled trial. We recently reported that low antioxidant levels were associated with gastric cancer in Zambia. In an earlier study, we had demonstrated that people with the HIV infection tend to have higher gastric pH than those without HIV.

Methods Archival samples from a randomised controlled trial, (Kelly et al: Trans R Soc Trop Med Hyg, 2008; 102:194–9) were used in this study. They were collected from healthy volunteers in Missisi, a densely populated and impoverished township in Lusaka, and carefully stored at −80°C in a secure laboratory at the University Teaching Hospital, the largest referral hospital in Zambia. In this controlled trial, 500 volunteers were randomly allocated to either a micronutrient-antioxidant supplementation or placebo. The little is known about the molecular pathogenesis of these lesions. The precursor lesions - hyperplastic and serrated polyps, are initiated by BRAF or KRAS mutations which initially induce proliferation but are followed by activation of oncogene-induced senescence (OIS) pathways resulting in telomere independent cell-cycle arrest. Subversion of OIS mechanisms is thus necessary for progression of serrated lesions. We assessed (epi)genetic mutation burden and morphogen expression in different colorectal polyps and investigated the effect of disrupted morphogen balance on OIS systems.

**MICRONUTRIENT-ANTIOXIDANT SUPPLEMENTATION**

None Declared.

Disclosure of Interest None Declared.

**BONE MORPHOGENETIC PROTEIN (BMP) PATHWAY DYSREGULATION SUBVERTS ONCOGENE INDUCED SENESCENCE MECHANISMS IN THE SERRATED PATHWAY OF TUMOURIGENESIS**

1T Boitsova, H Rafferty, H Davis, C Bardella, P Gill, J East, T Tomlinson, R Chetty, 2Silver, S Leedham. 1Dept Medicine, University Teaching Hospital, Lusaka, Zambia; 2Dept Medicine, UTH, Lusaka, Zambia; 3Blizard Institute, Barts & The London, London, UK

Introduction The serrated colorectal carcinogenesis pathway is increasingly recognised as a distinct and important route to CpG island methylated phenotype (CIMP) carcinomas, yet comparatively
supplements contained vitamins, A, B1, B2, B6, B12, C, D3, E, niacin, folic acid, iron, zinc, copper and selenium. We analysed 215 samples collected in 2005, from subjects who had taken either supplementation or placebo for a median of 19 (range 14 to 27) months. Gastric atrophy was determined using pepsinogen 1 to 2 ratio of less than 3.0 using BIOHIT ELISA kits, Helsinki, Finland, according to the manufacturer’s instructions. Fasting gastric pH was available on 121 participants. The presence of atrophy was compared between the intervention and the placebo groups. Other factors analysed included the effect of HIV infection, age, body mass index (BMI), smoking, alcohol intake and gastric pH.

**Results** Gastric atrophy was found in 8 (7.8%) of 103 subjects on supplementation, and 7 (6.3%) of 112 on placebo (RR 1.24; 95% CI 0.47–3.3; P = 0.22). HIV infection was diagnosed in 5 participants with atrophy and 61 without (RR 1.07; 95% CI 0.37–3.2; P = 1.0). The lack of effect of supplementation on atrophy was not changed after stratification for HIV status (M-H OR 2.0; P = 0.99). Gastric atrophy was found to be more prevalent in those above the age of 40 years. In univariate and multivariate analysis, BMI, smoking, alcohol intake showed no impact on gastric atrophy. Gastric pH and pepsinogen 1.2 ratio were inversely correlated (Spearman’s r = −0.34; P = 0.0001).

**Conclusion** An average of nine months of micronutrient-antioxidant supplementation has no impact on gastric atrophy in Zambian healthy adults. The high gastric pH seen in HIV patients can not be attributed to gastric atrophy.

**Disclosure of Interest** None Declared.

---

**Nutrition**

**PWE-174** **EVALUATION OF A COMMUNITY-BASED NUTRITIONAL SCREENING AND INTERVENTION SERVICE FOR NEWCASTLE ELDERLY CARE HOME RESIDENTS: THE EFFECT ON NUTRITIONAL AND CLINICAL OUTCOMES**

doi:10.1136/gutjnl-2013-304907.462

1C G Mountford, 2A Okonkwo, 3L Sweeney, 4N P Thompson. 1Dept of Gastroenterology, Newcastle Upon Tyne Hospitals NHS Foundation Trust; 2Medical School, Newcastle University; 3Dept of Dietetics, Newcastle Upon Tyne Hospitals NHS Foundation Trust, Newcastle Upon Tyne, UK

**Introduction** Malnutrition affects more than 3 million people in the United Kingdom. Elderly care home residents are at particular risk. This study aimed to establish the prevalence of malnutrition in Newcastle elderly care home residents and investigate whether a community nutritional screening and intervention programme could be successfully delivered and could improve nutritional and clinical outcomes in residents who were malnourished or at risk of malnutrition.

**Methods** This was a multi-centre community-based cohort study in five care homes in Newcastle. 205 participants entered the study; 66 males and 139 females (mean age 84.2 ± 8.5 years). Residents were excluded if they were receiving end of life or respite care, were in hospital or were uncooperative with measurements. Follow-up data was available on 175 residents. Residents already taking an oral nutritional supplement (ONS) were excluded from the interventions. Those with a ‘Malnutrition Universal Screening Score’ (‘MUST’) of 0 were followed up at 12 weeks, but received no active intervention. Those with a score of 1 received dietetic advice to increase oral intake and those with a score of 2 or more received dietetic advice and were prescribed an ONS (220ml, 1.5kCal/ml) twice daily for 12 weeks.

Body mass index (BMI), ‘MUST’ score, mini nutritional assessment score® and mid upper arm muscle circumference (MAMC) were recorded at baseline and 12 weeks. Feeling of wellbeing was assessed using the Geriatric Depression Scale (GDS). Hospital admission data for the study period were compared to data for the previous year for each home.

**Results** Prevalence of malnutrition or risk of malnutrition was 36.6% (95% CI 30.0 to 43.2%). Mortality during the study period for residents with a ‘MUST’ score of 0 or 1 was 7.9% and rose to 50.0% in those with a score of 4 (P = 0.004). Nutritional status did not deteriorate in the majority (56%) of residents during the study. However, there were no clinically significant improvements in anthropometric measures, including BMI (P = 0.445) and MAMC (P = 0.256) following any study intervention. There were no significant changes in GDS (P = 0.385) or hospital admission rates (P = 0.587) following any intervention.

**Conclusion** Malnutrition is common in care home residents and associated with increased mortality. Nutritional interventions, including ONS, given over a 3-month period in those with a MUST score of 2 or more, did not appear to improve nutritional status, reduce mortality or decrease hospital admission rates.

**Disclosure of Interest** None Declared.

---

**Nutrition**

**PWE-175** **SIMPLE INTERVENTION IMPROVES OUTCOME IN DELIVERY OF PARENTERAL NUTRITION**

doi:10.1136/gutjnl-2013-304907.463

1P Davies, 2J Bowness, 3C Whittingham, 4A Basii. 1Surgey; 2Dietetics; 3Gastroenterology, St Helens and Knowsley NHS Trust, Prescot, UK

**Introduction** Recent report by NCEPOD into hospital care of patients receiving parenteral nutrition (PN) suggested that only 19% adult patients had PN care that was considered to represent good practise. An initial audit (retrospective audit over six months) in our hospital suggested lack of quality control at the point of...