been used to improve quality and define minimum standards for colonoscopy across the UK.[1] JAG also provides a clear competency based framework to assess trainee performance; however, there is reluctance in some units to allow independent senior registrars, who have passed JAG assessment, to practise independently. At our teaching centre we encourage appropriately trained registrars to perform their own lists. Supervision is available if needed and departmental protocols define limits of therapy to be undertaken independently (eg, large polypectomies). Attendance at training lists to continue development is also actively encouraged. Our aim was to evaluate whether this provided a quality of service comparable to national standards.

Methods We used data collected retrospectively from endoscopy reporting software (Ascribe-Scorpio) on the caecal intubation rate, polyp detection rate, sedation usage and complication rate, to evaluate the performance of senior gastroenterology trainees between 2007 and 2011, against the JAG auditable outcomes for colonoscopy.

Results Over a 4-year period, 17 senior gastroenterology registrars performed a total of 2917 colonoscopies. 2221 (76.1%) procedures were unsupervised and 696 (23.9%) were supervised. An uncorrected caecal intubation rate of 94.9% was achieved during unsupervised procedures, 96.6% with supervision (p=0.93, X^2). Polyp (all type) detection rate was 30%. Average sedation dose for patients aged >70 years, was pethidine 30 mg and midazolam 1.96 mg; aged <70 years, pethidine 35.5 mg and midazolam 2.54 mg. Flumazenil was used on four occasions and naloxone on one occasion. There were two major complications. One perforation, following argon therapy to an angiodysplasia, treated conservatively and one major post polypectomy bleed, treated endoscopically but admitted for observation. None of the registrars were outliers on the comfort score data.

Conclusion Our findings show that given appropriate training and support, independently practising senior UK gastroenterology registrars contribute significantly to service delivery, providing high quality colonoscopy, meeting JAG auditable outcome standards.

Competing interests None declared.

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BSG inflammatory bowel disease section symposium

OC-139 TIME TRENDS IN RATES OF FIRST SURGICAL RESECTION AND THIOPURINE USE IN CROHN'S DISEASE: RETROSPECTIVE COHORT STUDY

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Introduction The efficacy of thiopurines in treating Crohn's disease is well established but their role in altering the long term natural history of Crohn's disease remains controversial. Using a national population based cohort we aimed to determine temporal trends in surgery and use of thiopurines.

Methods We undertook a retrospective study of electronic medical records from primary care. We identified newly diagnosed patients with Crohn's disease between 1989 and 2005 in the General Practise Research database (GPRD) which contains prescription and clinical data for over 13 million people in the UK and has been validated for research. Incident cases were eligible if registered for more than 12 months before their diagnosis. Patients were allocated to three cohorts according to year of diagnosis: group A (1989–1993), group B (1994–1999) and group C (2000–2005). We calculated rates of first surgical resection and thiopurine prescribing (azathiopurine and 6-mercaptopurine) within 5 years of diagnosis to examine temporal trends.

Results 5654 patients met our inclusion criteria. The mean age was 37 years and 57% were female. During the study period from 1989 to 2010 rates of intestinal surgery decreased while prescription of thiopurines increased. Rates of first surgery were 17, 11, and 6/1000/year (χ^2 p<0.05) and thiopurine prescriptions were 27, 33 and 45/1000/year (χ^2 p<0.05) in groups A, B and C respectively. Furthermore rates of thiopurine prescription within the first year of diagnosis were 11, 15, and 26/1000/year (χ^2 p<0.05) in groups A, B and C respectively.

Conclusion Rates of first surgical resection have markedly decreased with concomitant earlier and increased use of thiopurines over the same time frame. Further work is proposed to explain these trends.

Competing interests None declared.

OC-140 HYDROXYCHLOROQUINE AS A TREATMENT FOR CROHN'S DISEASE: ENHANCING ANTIBIOTIC EFFICACY AND MACROPHAGE KILLING OF *E COLI*

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Introduction Mucosal *E coli*, increased in Crohn's disease, have an adherent invasive phenotype (AIEC) and replicate within macrophages. AIEC can induce granulomas in vitro and in vivo and treatment leads to remission of colitis in animal models of Crohn's.[1] Hydroxychloroquine, which alters phagolysosomal pH and cellular iron mobilisation, enhances antibiotic efficacy and macrophage killing of other intra-macrophage organisms (*Coxiella, Tropheryma*).[2] We postulate Hydroxychloroquine may be a useful treatment in Crohn's.

Methods We aimed to assess the effect of Hydroxychloroquine, alone or in combination with antibiotics, on intra-macrophage *E coli* survival. Further, we aimed to investigate the role of intracellular iron release and phagolysosomal pH as possible mechanisms of action. J774A.1 murine macrophages were infected with representative Crohn's *E coli* isolates, HM605 (colonic) or LF82 (ileal), and the effect of Hydroxychloroquine and/or antibiotics was assessed using the gentamicin protection assay. FeNTA (pH independent ferric iron release from transferrin) and FeCitrate (pH dependent) were assessed for their ability to reverse the effect of Hydroxychloroquine. Fluorescence of macrophages co-infected with *E coli* and pHrodo *E coli* bioparticles was measured with a plate reader to determine phagolysosomal pH. Standard curves obtained by co-incubation of cells with nigericin and phosphate-citrate buffers allowed calculation of pH from fluorescence.

Results Compared to untreated control, Hydroxychloroquine significantly reduced intra-macrophage *E coli* survival in a dose dependent manner at clinically achievable concentrations (31.4±4.6% at 2 μg/ml, p<0.001, ANOVA, N=3 where n=3). Combination with Doxycycline was significantly more effective than antibiotic treatment alone both at C_{max} (34.5±4.7% vs 75.5±6.7%, p<0.001, N=6) and 10% C_{max} (48.9±5.4% vs 89±5.6%, p<0.001, N=6). Similar synergy was seen with Ciprofloxacin at 10% C_{max} (4.63±1.0% vs 7.9±1.3%, p<0.05, N=3) but not at C_{max} where antibiotic alone markedly reduced bacterial survival