

criteria. Six studies adopted the use of teamwork training intervention; three studies assessed outcomes based on the familiarity of teams, and two studies correlated teamwork quality with patient outcome. Overall, seven papers demonstrated a positive effect of teamwork on patient outcomes, of which five were significant. Two papers found mixed improvements and deteriorations, two papers found no correlation. There exists considerable heterogeneity in methodology, study characteristics and design.

**Conclusions:** The positive effect of teamwork on surgical patient outcome is overall supported. Insignificant and opposing results are likely due to inadequate methodology and study design. Common reasons identified are cohort size, lack of a validated training programme, length of training and follow-up time, and non-randomization.

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#### 0165: THE RELATIONSHIP BETWEEN GRIT AND BURNOUT: HOW DO SURGICAL TRAINEES COMPARE TO OTHER DOCTORS?

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**Aim:** This aim of this study is to examine the relationship between burnout and the personality trait of 'grit' amongst surgical trainees, and to compare these findings to surgical consultants and doctors in other specialities.

**Methods:** A survey was distributed to doctors across the UK via social media. It consisted of two validated scales; the Short Grit Scale (SGS) and the Oldenburg Burnout Inventory (OLBI).

**Results:** 548 responses were collected. There was a negative correlation between grit and burnout amongst surgical trainees [ $r = -0.281, p < 0.01$ ]. In comparison to consultant surgeons, trainees has lower levels of grit ( $p < 0.001$ ) and higher burnout ( $p = 0.01$ ). Higher surgical trainees had higher levels of grit than core trainees ( $p < 0.01$ ). No significant differences in grit or burnout were found between trainees in different specialities or by gender. We found a weak positive correlation between age and grit ( $r = 0.145, p < 0.01$ ).

**Conclusion:** Surgical trainees report higher levels of burnout than consultants, but levels are comparable to other UK trainees. Our findings show that grit increases throughout surgical training. As high levels of grit are associated with lower burnout, providing support to increase resilience may reduce the burden of burnout in surgical trainees.

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## ASit/ASGBI short paper prize

#### 0794: THE ACCURE-UK TRIAL: THE EFFECT OF APPENDECTOMY ON THE CLINICAL COURSE OF ULCERATIVE COLITIS – A FEASIBILITY STUDY

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**Background:** Several non-randomised studies have found that in patients with established ulcerative colitis (UC), appendectomy may be associated with a reduced risk of relapse and reduced frequency of progression to colectomy. Our study aimed to determine the feasibility and acceptability of randomisation between appendectomy versus standard treatment in both UC patients and their clinicians.

**Methods:** This prospective multicentre randomised feasibility study included adult patients with an established UC diagnosis who were currently in remission but had had a relapse within the previous 12

months. Patients were randomised 1:1 to standard medical treatment alone, versus elective laparoscopic appendectomy plus standard medical treatment. The primary outcome measure was completion of planned recruitment according to a predetermined schedule.

**Results:** Of 106 patients approached, 60 (56.6%) were willing to be randomised. Overall 53 patients were randomised across 6 sites. Recruitment took slightly longer than anticipated, but the overall recruitment target of 48 patients was exceeded and the recruitment rate increased over time, with 25 patients recruited in the final two months. Appendectomy was completed as a day case in the majority of cases. Four patients experienced minor complications.

**Conclusion:** Appendectomy was an acceptable and safe treatment option for both patients and clinicians.

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#### 1101: THE HOT CLINIC; PREVENTING EMERGENCY ADMISSIONS AND REDUCING LENGTH OF STAY IN A DISTRICT GENERAL HOSPITAL

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**Aim:** To evaluate the Hot Clinic (HC); which manages ambulant general surgical patients in emergency and post-discharge settings.

**Method:** Attendances were retrospectively identified between October 2014 and October 2015. Non-surgical and patients with limited documentation were excluded. Attendances were classified as emergency; General Practice (GP)/Emergency Department (ED) referrals and post-discharge; following an elective/emergency admission.

We evaluated complaint, use of dedicated ultrasound scan (USS) slot and outcome; allowing numbers of prevented emergency admissions and post-discharge patients with reduced length of stay to be determined.

**Results:** Of 536 HC attendances, 26 were excluded, leaving 510 for analysis. Of 180 emergency patients 134 admissions were prevented; 116 (64.4%) discharged to GP and 17 (9.4%) with outpatient follow-up. Twenty-six (14.4%) were admitted, 2 (0.01%) underwent day-case surgery. One hundred nineteen patients presented with abdominal pain and one hundred (84.0%) were investigated with USS.

There were 330 attendances for 221 post-discharge patients for assessment of bloods ( $n=74$ ), surgical wounds ( $n=43$ ), clinical condition ( $n=26$ ) and surgical drains ( $n=35$ ). Length of stay was reduced for 175 (79.2%) post-discharge patients.

**Conclusion:** The HC with dedicated USS slots prevents admission for emergency patients presenting with abdominal pain. The HC provides early follow-up to post-discharge patients, reducing length of stay.

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#### 0415: MICROBIOLOGICAL SWABS HAVE NO ROLE IN THE MANAGEMENT OF ACUTE PILONIDAL ABSCESSSES

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**Aims:** Microbiological swabs are often taken at the time of surgery for the treatment of acute pilonidal abscesses. This audit assessed whether swabs play a role in the management of these patients.

**Methods:** A retrospective audit of electronic records was undertaken over a 2-year period between 1<sup>st</sup> January 2012 and December 31<sup>st</sup> 2013. Variables measured included patient sex, episode index, swab results, antibiotic use and recurrences.

**Results:** Over the 2-year period there were 182 operations for acute pilonidal abscesses. Microbiological swabs were taken in 151 cases (83%). The most common culture was anaerobe (36%) followed by no growth (19%) and skin flora (8%). In total, 114 reports (94%) were issued after the patient had been discharged. Post-operative antibiotics were prescribed in 15 cases (8%) and within this group 9 patients (60%) had no growth on swab results. There were 11 recurrences (6%) with no correlation between the initial swab results and recurrent swab results being observed.

**Conclusions:** In this audit, swab results did not alter any patient's treatment and nearly all reports were issued after the patient had been discharged. Recurrent abscesses do not appear to be linked to initial swab results.

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#### 0705: ADHESIVE SMALL BOWEL OBSTRUCTION: TRENDS IN INCIDENCE, MANAGEMENT AND OUTCOMES OVER 15 YEARS

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**Aims:** Small bowel obstruction in a patient who has previously undergone abdominal surgery is a common emergency presentation in general surgery. This study describes the changes in incidence, management and outcomes in adhesive small bowel obstruction (ASBO) over a 15 year period (2000–2014).

**Methods:** Data for all emergency admissions under a general surgeon were collected from regional trust information departments and analysed.

**Results:** 6,557 cases of ASBO were identified and divided into 3 time periods. Requirement for operative management has reduced from 54% to 40% to 29% over the time intervals ( $p < 0.05$ ). Overall, patients requiring surgery were older than those who improved with conservative management (61.7 years compared to 56.1 years,  $p < 0.05$ ). There was a significant reduction in length of stay (17.1 days, 14.9 days, 12.4 days) as well as inpatient mortality (11%, 8%, 4%) during the study period ( $p < 0.05$ ).

**Conclusions:** There has been an increase in emergency admissions for ASBO over time, but operative management is required less often. Conservative management is more likely to be successful in younger patients. Overall outcomes as measured by length of stay and inpatient mortality improved during the study period. Advances in operative techniques and preoperative management could account for these positive results.

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#### 0520: SURGICAL MANAGEMENT OF FISTULATING PERIANAL CROHN'S DISEASE – RESULTS OF A UK SURVEY

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**Aim:** Fistulating perianal Crohn's disease (PCD) affects 20–50% of Crohn's patients. Despite advances in medical therapy, recurrence is frequent and there is significant impact on quality of life.

**Method:** A questionnaire was developed to assess current Consultant Colorectal surgeon practice in PCD and piloted at DDF 2015. The final version of the questionnaire was disseminated through the surgical trainee research collaboratives. Responses were uploaded onto the REDCAP online database.

**Result:** Collaborators from 21 centres collected 107 responses. In the acute setting, 38% always give antibiotics, with metronidazole preferred (81.5%). Incision and drainage (30%) or draining seton (35%) are preferred at first operation. Draining seton is preferred at first-planned EUA (61%). Cutting seton (86.1%), excision of tract (60.1%) and fistulotomy (37.9%) are avoided. IBD MDT was available to 85% of respondents, and 29% routinely discussed PCD patients. Multimodal therapy is practiced by 92% of respondents. Preferred 'definitive' procedures were removal of seton (68%), fistulotomy (52%), mucosal advancement flap (38%) and fistula plug (32%).

**Conclusion:** A collaborative approach demonstrates wide variation in practice across UK centres. This information will inform a consensus exercise for UK practice as well as feasibility for a planned surgical trial.

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#### 0888: ACUTE DIVERTICULITIS: RISK OF READMISSION AND EMERGENCY SURGERY FOLLOWING AN ADMISSION FOR ACUTE DIVERTICULITIS

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**Aim:** Diverticular disease is accountable for significant morbidity and mortality. Current guidelines suggest elective resection should be individualised to each patient. We aimed to identify risk factors associated with risk of readmission.

**Method:** This study was conducted between April 2006 and March 2011 identifying 76,499 patients over the age of 18 with acute diverticulitis who were followed up for 4 years. Exclusion criteria included previous diagnosis of diverticulitis in HES data, colorectal cancer, GI bleed, previous colectomy, undergone surgery or died on index admission. 65,162 patients were included in the study.

**Result:** This is the largest study using HES data in the UK. A mixed effects logistic regression model was used for analysis. The re-admission rate equaled 11.55%. 1.16% of patients were readmitted within 30 days. An inverse relationship between age and risk of re-admission was found. Females were 46% more likely to be re-admitted ( $p < 0.001$ ). Complicated diverticulitis increased the risk of re-admission (OR 1.5 (0.95–1.12)  $p < 0.001$ ). Alcohol consumption also increased the risk of re-admission (OR 1.26 (1.17–1.35)  $p$ -value  $< 0.001$ ).

**Conclusions:** Risk of re-admission with acute diverticulitis decreases with older age, male gender and uncomplicated diverticulitis. Elective surgery should be offered based on the individual's risk factors for readmission.

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#### 0437: DEFINING A 3D BIOMIMETIC COLORECTAL TUMOUROID

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**Aim:** Colorectal cancer is a worldwide healthcare problem. Better understanding of pathogenesis and relevant models to study drug action could improve therapies. There has been an increase in 3D in-vitro models, however most lack tissue density. We aimed to create and characterize a 3D in-vitro cancer model, comprising cancer and stromal cells in a dense matrix.

**Methods:** CRC cells (HT29) and patient fibroblasts (CRC-associated fibroblasts-CRF; normal colon fibroblasts-CF) were used. High density compressed tumouroids (9.6%, collagen 3D-cultures) were manufactured by mixing different ratios of HT29: fibroblasts. The following were measured: cell viability for establishing seeding density and optimal HT29: fibroblast ratio; size measurements of cancer spheroids; biomarker (TGF $\beta$ , VEGF) expression (ELISA); cell/spheroid morphology (cytokeratin-20, e-cadherin, vimentin,  $\alpha$ -SMA immunofluorescence).

**Results:** Maximum seeding density for 7-day proliferation was 75,000 cells/(1.3ml)gel. Tumouroids with HT29:CF:CRF ratio(1:2) had significantly increased ( $p < 0.05$ ) metabolic activity. Cells aggregated in spheroids(epithelial) and stained for cytokeratin-20 and e-cadherin or distributed throughout(fibroblasts) and stained for vimentin (mesenchymal phenotype). Co-culture spheroid diameter and surface area was significantly ( $p < 0.05$ ) higher than HT29 monocultures. Biomarker release was higher in co-cultures (1:2) compared to HT29 monocultures ( $P = 0.008$ ) on day 3.

**Conclusions:** High density tumouroids provide a biomimetic platform that resembles the tumor microenvironment, suitable for assessing tumor growth and potentially therapeutic responses.

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