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Introduction Adenoma detection rate (ADR) is the recommended surrogate marker for a thorough colonoscopic examination. Collecting histology makes its calculation arduous so polyp detection rate (PDR) is often used instead. It has been proposed that the ADR:PDR ratio can be used as a "conversion factor" to accurately estimate ADR. Work from the Bowel Cancer Screening Programme (BCSP) has shown that adenomas are more prevalent in this population suggesting the ratio may be different. We aimed to assess the feasibility of using a "conversion factor" to estimate ADR from PDR in different UK populations.

Methods Colonoscopy performance data from the symptomatic services were collected over a 3-month period from 12 units in the northern region of England. Data from all procedures performed by BCSP accredited colonoscopists were excluded from this group. National colonoscopy performance data were extracted from the BCSP database from a 12-month period. Colonoscopists detecting polyps in ≥ 10 patients were included. Data collected included colonoscopist, PDR and ADR. The conversion factor was calculated separately for each group. The ADR:PDR ratio was calculated at the level of the colonoscopist and the group mean used as the conversion factor. The estimated ADR was calculated using: PDR \times conversion factor. The relationship between the actual and estimated ADR was evaluated using Pearson's correlation coefficient.

Results In the symptomatic services 3219 colonoscopies were performed by 55 colonoscopists. In the BCSP 31017 procedures were performed by 147 colonoscopists. The PDR and ADR respectively for the symptomatic group were 30.7%, IQR 24.8–40.0 and 18.0%, IQR 14.0–24.0, and for the BCSP group were 59.3%, IQR 53.8–65.0 and 46.0%, IQR 43.0–51.3. The ADR:PDR ratio in the symptomatic and BCSP groups were 0.59 (IQR 0.47–0.69) and 0.78 (IQR 0.74–0.81). The correlation between the estimated and actual ADR was 0.68 ($p < 0.001$) and 0.83 ($p < 0.001$) for the symptomatic and BCSP groups respectively.

Conclusion We demonstrate using estimated ADR, when calculation of ADR is not feasible, may be an acceptable marker of quality in colonoscopy. The difference in the conversion factors between the groups studied here is likely to be due to the selected population colonoscoped within the BCSP but suggests it will need to be adjusted for different patient populations. Studies to further validate this concept and ensure that conversion factors remain consistent over time are ongoing.

Competing interests None declared.

PWE-189 ACHIEVING HIGH QUALITY COLONOSCOPY: USING GRAPHICAL REPRESENTATION TO MEASURE PERFORMANCE AND RESET STANDARDS

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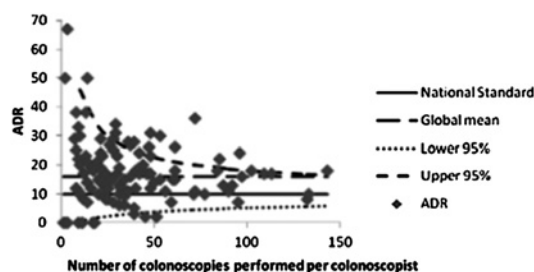
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Introduction The aim of colonoscopy is to examine the colon completely and meticulously looking for malignant and pre-malignant

lesions (adenomas). The measure for completeness is the caecal intubation rate (CIR) and for thoroughness the adenoma detection rate (ADR). National Standards (NS) are $\geq 90\%$ and $\geq 10\%$ respectively.¹ Variability in CIR, ADR and thusly quality, have been shown but comparison between individuals and units is difficult.^{2,3} We aimed to use graphical representation to assess colonoscopy performance in the North East of England.

Methods Data on colonoscopy performance and sedation use were collected over 3 months from 12 units. Colonoscopies performed by screening colonoscopists were included in the global CIR only. Funnel plots with upper and lower 95% confidence limits (CL) for CIR and ADR were created using the binomial probability distributions for inferences about a single proportion.

Results CIR was 92.5% (n=5720) and ADR 15.9% (n=4748). All units and 128 (99.2%) colonoscopists were above the lower limit for CIR. All units achieved the ADR standard with 10 above the upper limit. Ninety-nine (76.7%) colonoscopists were above 10%, 16 (12.4%) above the upper limit and 7 (5.4%) below the lower limit (Abstract PWE-189 figure 1). Median medication doses were: 2.2 mg midazolam, 29.4 mg pethidine, and 83.3 mg fentanyl. 15.1% of colonoscopies were unsedated. Complications were bleeding (0.10%) and perforation (0.02%). There was 1 death possibly related to bowel preparation.



Abstract PWE-189 Figure 1 Funnel plot showing each colonoscopist's ADR with respect to the NS. CLs calculated relative to the NS.

Conclusion Results indicate colonoscopies are performed safely and to a high standard. Funnel plots can highlight variability and areas for improvement. Analyses of ADR presented graphically around the global mean suggest that the NS should be reset at 15%.

Competing interests None declared.

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PWE-190 ENDOSCOPIC MUCOSAL RESECTION OF LARGE COLORECTAL POLYPS: OUTCOMES FROM A REGIONAL BOWEL CANCER SCREENING CENTRE

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Introduction Endoscopic mucosal resection (EMR) of colorectal polyps has been reported to be a safe and effective technique within

the UK. Most series have however included smaller polyps (1 cms or less) and there is paucity of data on EMRs limited to large polyps. We report the outcomes on a series with large polyps (>2 cms) from a bowel cancer screening centre in the UK.

Methods A total of 5190 polypectomies were performed within the region from January 2008 to December 2011 on the Bowel Screening Programme. Data were collected from three hospitals on all large polyp EMR greater than 2 cm in size. Data were analysed using the SPSS V.20.

Results A total of 61 patients with polyps 2cm or greater were identified. The mean age was 69 years, 75% (n=46) of which were male. The mean size of the polyps resected was 35 mm (range 20–60 mm). The majority of the polyps were sessile (n=40) and located in the left colon (n=43). Tattooing was performed in 46% (n=28) and Argon-beam photocoagulation (APC) therapy was applied in 41% of cases (n=25). In 97%, the resections were complete (n=59). Histopathology results were obtainable in 57 patients of whom 12% (n=7/57) showed high grade dysplasia and 5% (n=3/57) were confirmed as adenocarcinoma. The overall major complication rate was 3% (n=2). Both complications were bleeding post-EMR. Surveillance data were available for 43 patients up-to 12 months post EMR. Six recurrences (10%) were seen at the EMR site at 3 months, five of these in left colon. On reviewing their initial EMR, the polyps had a median size of 25±6 mm; 50% (n=3/6) had APC therapy and 5/6 the excision was endoscopically complete on initial EMR. Histology confirmed low grade dysplasia (LGD) in all cases. Recurrence was endoscopically treated successfully in all cases. Recurrence rate was not influenced by the size or site of the polyp or APC therapy. Sessile polyp EMR were more likely to show recurrence (n=5/6). At 12 months, eight patients had recurrence. Six of these patients had endoscopically complete excision on initial EMR. On reviewing their initial EMR, the polyps had a median size of 35±5 mm; 50% had APC therapy. Recurrence was treated successfully in all cases.

Conclusion Endoscopic mucosal resection for large colorectal polyps is safe with relatively low complication rates compared to laproscopic surgery. Recurrence rate is low at 3 months but can still occur upto 12 months in lesions felt to be completely excised.

Competing interests None declared.

PWE-191 THE ROLE OF ERCP IN THE MANAGEMENT OF POST CHOLECYSTECTOMY BILIARY LEAKS

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Introduction Bile duct injury causing a biliary leak after cholecystectomy is an important and well recognised surgical complication. It has a significant impact on the post operative recovery and is often managed endoscopically with the insertion of a biliary stent.

Objectives To assess the clinical course of patients who had a biliary stent placed for a post operative bile duct leak.

Methods All patients who underwent ERCP and biliary stent insertion for a biliary leak between 1 November 2009 and 30 November 2011 at our NHS trust were identified. Demographic data, endoscopic procedure details and outcomes were recorded.

Results 25 patients had endoscopic (Endoscopic Retrograde Cholangio Pancreatography-ERCP) management of a biliary leak by stent insertion. 72% of the cohort were females. Age range was between 19 and 80 years with a mean of 52.6 years. 16/25 (64%) of patients had two ERCPs for the insertion and subsequent removal of a plastic stent (size between 7 and 10 Fr). Nine patients (36%) had >2 ERCPs due to a persistent leak. 10/16 patients (62.5%) had the 2nd ERCP within 7 weeks and all had no persistent leak during that examination. The remaining 6 (37.5%) had the 2nd ERCP later than

7 weeks, and found to have no further biliary leak. The mean time between the two ERCPs was 9.3 weeks. Three Patients with a persistent biliary leak (33%) had an ERCP as early as 3 days. Others had between 1 and 4 weeks. None of the patients had any complications secondary to ERCP. The majority of the biliary leaks originated from the cystic duct stump (64%) or gall bladder bed (20%). Out of the total 25, four patients (16%) had retained stones within the common bile duct identified at the second ERCP and all were successfully extracted. 22 (88%) of the cohort did not have a persistent leak or stricture during their final ERCP. Three patients (12%) developed a stricture at the common bile duct or common hepatic duct.

Conclusion Within a district general hospital setting, the majority of patients with a post-cholecystectomy biliary leak can be managed effectively with the insertion of plastic biliary stents. A minority of patients will develop a subsequent biliary stricture.

Competing interests None declared.

PWE-192 EFFICACY AND SAFETY OF EXTENSIVE ENDOMUCOSAL RESECTION FOR COMPLETE BARRETT'S ERADICATION IN EARLY BARRETT'S NEOPLASIA: A META-ANALYSIS

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Introduction The efficacy of complete Barrett's eradication by extensive endomucosal resection (E-EMR) of Barrett's oesophagus with early cancer ranges from 60% to 100% with a post-resection stricture rate of up to 88% in a recent RCT.¹ The primary aim of this meta-analysis was to determine the long-term efficacy and safety of E-EMR for complete Barrett's eradication in patients with early Barrett's cancer.

Methods MEDLINE, EMBASE and PubMed databases were searched using keywords, "Barrett's oesophagus," "oesophageal cancer," "endomucosal resection," "circumferential endomucosal resection," Barrett's high-grade dysplasia and Barrett's intra-mucosal carcinoma from January 1965 to December 2011. Articles were selected/reviewed and data collected based on pre-defined inclusion criteria, independently by two authors (RK and TT). Meta-analysis using random effects model was done.

Results Thirteen studies (N=691) were included in the final analysis. (586 males, average age, 65.9 range 65–67). 116 patients in six studies had long-segment Barrett's. The average Barrett's length was 3.78 cm (range 2–4.9 cm). Visible lesions were seen in 371/586 (63.3%) patients. At an average of 2 (range 1.5–2.5) EMR sessions, four resections (range 3–8) were done per session Complete Barrett's eradication was achieved in 71.9% (95% CI 68.1% to 75.4%) and eradication of early Barrett's cancer in 96% (95% CI 91% to 99%) of patients. At an average follow-up of 20.5 months (range 9–31.6) Barrett's/dysplasia recurrence was seen in 13% (95% CI 10.7%>15.9%). Total number of resections (p=0.026) and age (p=0.037) were significant confounders for complete Barrett's eradication. The overall stricture rate was 39% (95% CI 35%>43%). Procedure related perforations occurred in 12/691 (1.3%) and bleeding in 9.9% (95% CI 5.1%>13.5%) of patients. On meta-regression analysis there were no significant confounders for stricture formation.

Conclusion Complete long-term complete Barrett's eradication in patients harbouring early cancer is effective in only 71.9% of patients with age and total endoscopic resections being significant confounders. The procedure appears safe but has a stricture rate of 39%.