procedure it can be helpful to decompress the gallbladder by aspirating its contents. The benefit of gallbladder aspiration in the elective setting is however unclear. It is important to be aware of the likely microflora of bile in patients undergoing emergency cholecystectomy to facilitate the use of appropriate targeted antibiotics. The aim of this study was to establish the prevalence of intraoperative gallbladder aspiration during acute cholecystectomy and to determine the microflora after microscopy and culture.

Methods A retrospective analysis of patients who underwent emergency cholecystectomy for acute cholecystitis over an 18-month period (July 2010 to January 2012) identified from PAS data. Cross referencing with microbiology electronic database for microscopy and culture findings from gallbladder aspiration samples.

Results 124 patients (56 male, 88 female, age range 18–90 years) underwent cholecystectomy during the study period. 29 (23.4%) patients underwent intraoperative aspiration of gallbladder contents, of which 20 (69.0%) had no organisms seen at microscopy and 14 (48.3%) grew no organisms after incubation in culture medium. Abstract PTU-088 table 1 outlines the organisms isolated in the remaining 15 patients; four grew an isolated organism and 11 grew more than one organism and also details the antibiotic profile following culture.

Abstract PTU-088 Table 1 Microorganisms isolated after culture of gallbladder aspirates and antibiotic profile (S = sensitive, R = resistant)

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Amoxicillin</th>
<th>Augmentin</th>
<th>Tazocin</th>
<th>Gentamicin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>S</td>
<td>R</td>
<td>S</td>
<td>R</td>
</tr>
<tr>
<td>E. coli</td>
<td>15</td>
<td>2</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Klebsiella pneumonia</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Enterococcus faecalis</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Enterobacter cloacae</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Conclusion In order to facilitate emergency cholecystectomy for acute cholecystectomy it is often necessary to decompress the gallbladder by aspirating its contents. In our case series this was necessary in 23% of patients. Almost half of aspirates were found to be sterile. In the remainder, the most common organism isolated was Escherichia coli, which is usually resistant to amoxicillin, but sensitive to tazocin. However, the sensitivity of E. coli to augmentin is less clear and surgeons should be aware of this when initiating antibiotic prophylaxis for acute cholecystitis.

Competing interests None declared.

REFERENCES


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Introduction Cholangiocarcinoma (CC) is a rare and challenging cancer with poor prognosis and low operative rate. Early successful biliary drainage is a key determinant of outcome and ERCP is the primary modality. It is unclear whether current care organisation for CC is optimal. We report a national study aimed at describing outcomes for all patients undergoing ERCP for CC in English hospitals and volumes at cancer networks and institutions.

Methods We built on linkage methods applied to overall ERCP mortality to develop new techniques to map the entire pathway of hospital care for incident cases of CC. 2 years of Hospital Episode Statistics (HES) data were merged (2006–2008) and admissions screened for CC diagnosis. To identify a 1-year incident cohort of CC, we selected only patients with first cancer coding in middle year (October–September), then extracted all admissions within 6 months (before and after) of first cancer coding, ordered chronologically, screened for ERCP, radiological intervention (FTC) and major surgery codes. Identified first and subsequent procedure dates, admission and discharge dates and co-morbidity. Linkage to death registry for death date. Cases allocated to cancer networks using provider codes.

Results Nationally, 1211 CC patients underwent ERCP with mean age (SD) of 72 (12) years and 623 male (51.4%). First ERCP was performed during an acute (emergency) hospitalisation in 690 cases (57%). ERCP case volumes for CC ranged from 7 to 79 patients per Cancer Network and 1–57 patients per Trust (n=146 institutions).

Outcomes (post-first ERCP): Mortality: 7 day, 35 (3.3%); 30 day, 172 (14.2%); 365 day, 731 (64.8%). Emergency readmission: 7 day, 110 (9.1%); 30 day, 252 (20.8%). Additional PTC: 213 (17.6%) with poorer 365 day survival in those needing both (ERCP alone: 64.5% vs ERCP+FTC: 73%, p=0.013, non-surgical cases only). Patients requiring first ERCP during an acute hospitalisation had poorer prognosis than those on elective pathway (Log rank, p<0.001). 365 day mortality for surgical 42.4% vs non-surgical 66.2% (p<0.001).

Conclusion First endoscopic intervention for this rare form of cancer is undertaken in most English hospitals, often during acute hospitalisation. There is wide variation in institutional case load. These data provide a potential tool for exploring variation in relation to local or network service provision and organisation.

Competing interests None declared.

REFERENCE

**Methods** Cases of cholangiocarcinoma were identified in Norwich (years 2004–2010) and Leicester (year 2007) from multi-disciplinary team meeting clinical databases. Inclusion required diagnostic evidence from CT scans and/or histology. Controls were patients, of similar ages and gender, with basal cell carcinomas treated in the dermatology departments at each hospital. The case notes of all subjects were reviewed to obtain confirmatory clinical information on cholangiocarcinoma and type 2 diabetes. Data were analysed using unconditional logistic regression to calculate ORs with 95% CIs, adjusted for age at diagnosis and gender.

**Results** A total of 80 cases of cholangiocarcinoma (median age at diagnosis = 76 yrs, range 41–96 years, 51% men) and 411 controls were identified. All patients had radiological evidence of cancer, with 86% involving the extrahepatic biliary system. The median survival of cases was 158 days (range 2–1092 days). There was a statistically significant increase in the odds of developing cholangiocarcinoma for those with type 2 diabetes (OR = 3.00, 95% CI 1.44 to 6.25), but not for type 1 (OR = 1.62, 95% CI 0.165 to 16.08). When the effect of type 2 diabetes was adjusted for use of oral hypoglycaemics, the associations were maintained (metformin OR = 3.60, 95% CI 1.26 to 10.25 and sulphonylureas, OR = 6.31, 95% CI 2.31 to 17.18).

**Conclusion** This epidemiological data supports the biological evidence for type 2 diabetes promoting the development of cholangiocarcinoma. Type 2 diabetes should be considered as a potential risk factor for cholangiocarcinoma in future aetiological studies.

**Competing interests** None declared.

**Inflammatory bowel disease II**

**PTU-092 CROHN’S DISEASE ASSOCIATED NOD2 VARIANTS SHOW DIFFERENTIAL ACTIVATION OF NF-κB IN RESPONSE TO AUTO-SIGNALLING AND MURAMYL Dipeptide**

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**Introduction** Single nucleotide polymorphisms (SNPs) located of the NOD2/CARD15 gene (nucleotide-binding oligomerization domain containing 2/caspase recruitment domain family, member 15) are associated with increased susceptibility to Crohn’s disease (CD). These SNPs are thought to disrupt the sensing of bacterial muramyl dipeptide (MDP) at the C-terminus of the NOD2 protein. The precise contribution of each of these SNPs (SNP5, 8, 12 and 13) to NF-κB activation by means of NOD2-auto-signalling and stimulation with MDP has not been investigated at low levels of NOD2 expression. Data regarding the linkage disequilibrium (LD) between these CD-associated SNPs are scarce.

**Methods** NOD2 variant constructs (rs2066842 (SNP5), rs2066844 (SNP8), rs2066845(SNP12) and rs2066847 (SNP13), SNP5+8, SNP5+12 and SNP5+13) were created by site-directed mutagenesis of a pCMV plasmid containing wild-type N-terminal FLAG-NOD2. NF-κB luciferase assays were performed on HEK295 cells following transient transfection (20 h) with wildtype (WT) and NOD2 variant constructs, titrating NOD2 from 1 to 100 ng/well. The NF-κB luciferase response of NOD2 (1 ng)-transfected HEK295 cells to MDP (10 µg/well) was measured. Two-way ANOVA and unpaired t-tests were used. By means of Haploview-analysis of sequencing data of the exons and exon-intron boundaries in 24 paediatric Caucasian Crohn’s disease patients, we assessed the LD between SNP5 and SNP8, 12 and 13.

**Results** Two-way ANOVA demonstrated an effect of NOD2 genotype and concentration on auto-signalling at low levels of expression (p<0.0001). This was due to the significant difference of auto-activation between WT and SNP5, SNP8 and SNP12 (p<0.001). At low levels of NOD2 expression (1–2 ng), the presence of SNP5 modified the auto-activating potential of SNP12 (p<0.01). Based on these titration experiments, a low NOD2 transfection of 1 ng/well was chosen for the MDP-stimulation experiment. MDP stimulation

**Competing interests** None declared.

**REFERENCE**