Patients’ satisfaction with on-demand sedation for out-patient colonoscopies

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Background and Study Aims To reduce costs related to colonoscopies the feasibility of performing unsedated colonoscopies has been explored. The aim of our study was to assess patient satisfaction with on-demand sedation and identify factors related to painful colonoscopies.

Patients and Methods The Gastronet registration tools are an endoscopy report (filled in on site) and a patient satisfaction questionnaire (filled in by the patient on the day after the colonoscopy). Data were collected from January 1, 2004 to December 31, 2006. Colonoscopies reported to be moderately or severely painful were defined as ‘painful colonoscopies’.

Results Nine endoscopy-centres representing 86 endoscopists reported 14,195 examinations and 12,354 (87%) patient reports were returned. Patient satisfaction with service and information given was >95% for all centres. Mean rate of painful colonoscopies was 34% and mean sedation rate 34%. Adjusted Odds ratio (ORadj) for painful colonoscopies was 2.2 (p < 0.001) when sedation was given. The ORadj for painful colonoscopies were similar for all but on centre (No. 4) with ORadj 1.6 (p = 0.04), while the ORadj for giving sedation was higher for all but one centre (No. 1) compared to the reference centre (ORadj 2.2–7.5, all p-values < 0.001).

Conclusion A high rate of painful colonoscopies was found. High sedation rates were not associated with low rates of painful colonoscopies. Recommending increased sedation rates as the only intervention to improve sub-optimal performance may not lead to lower rates of painful colonoscopies.

Australasian treatment guidelines for the management of pancreatic exocrine insufficiency

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Digestion of macronutrients is a primary role of the pancreas. It responds to food stimuli, secreting enzymes and bicarbonate into the duodenum, aiding digestion and absorption. When its exocrine capabilities are compromised, pancreatic exocrine insufficiency (PEI) can result in an inability to maintain normal digestion. PEI may arise from diverse aetologies including pancreatic cancer, chronic pancreatitis, cystic fibrosis, coeliac disease and/or after gastrointestinal surgery. A major consequence of PEI is fat malabsorption and malnutrition resulting in steatorrhoea. Other symptoms may also include abdominal pain, flatulence and weight loss in adults or lack of weight gain in children. If left untreated there is an increased risk of malnutrition-related complications and cardiovascular events.

Pancreatic enzyme replacement therapy (PERT) is the mainstay treatment for PEI, involving the administration of pancreatic enzymes with meals to enhance digestion and nutrient absorption. Recommendations for initial doses in adults start at 25,000 units of lipase per meal titrating up to a maximum of 80,000 units. Alongside medical practitioners, dietitians play an important role in disease management, assessing the patient’s diet for an adequate intake of protein, fat, vitamins and minerals for weight gain and/or maintenance in addition to monitoring PERT dosage titration and compliance.

To aid the diagnosis and treatment of sufferers of pancreatic exocrine insufficiency, a panel of expert clinicians were convened to draw a comprehensive set of treatment guidelines from evidence based studies and expert opinion. The guidelines recommend the treatment of PEI should remain a balance between enzyme replacement and tailored dietary management. These guidelines are the first in Australasia to address the diagnosis and management PEI across many disease states and aim to enhance PEI patient diagnosis, management and outcomes.

Funding was provided to the Australasian Pancreatic Club from Abbott Products Pty Ltd (formerly Solvay Pharmaceuticals).

Multi-disciplinary evaluation of an intensive care unit enteral feeding algorithm

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Feeding algorithms have been demonstrated to improve nutrition delivery in the intensive care unit (ICU), and usually relate to initiation of enteral nutrition, use of prokinetics and feeding mode. The algorithm that is the subject of this study enables ICU nursing staff to select type of feed and target feeding rate for patients requiring enteral feeding. The primary aim of this study was to evaluate acceptance of the algorithm across disciplines. Additionally, the impact of using the algorithm on amounts of enteral feed delivered was evaluated (compared to theoretical requirements).

Semi-structured interviews were conducted to gauge clinical staff attitudes toward the usefulness of the algorithm in practice. Eight nurses, three doctors and three dietitians were recruited via opportunistic sampling. Data on energy and protein intakes received by patients in comparison to estimated requirements was collected on 108 patients using nursing observation records of volume of feed delivered with deductions for discarded aspirates.

Positive feedback on usability of the algorithm was given by all interview participants. Common themes included that the algorithm ‘enabled feeding to start earlier’, ‘was simple to use’, and ‘ensured consistency of approach’. Results from the comparison to theoretical requirements compared favorably with reported literature values with >90% of estimated nutritional targets achieved, and enteral feeding commencing within 6 h.

The present study suggests that the new feeding algorithm is well accepted by users, improves enteral feeding delivery and enables feeding to start earlier within an ICU.
Patient outcomes post CT colonography after failed colonoscopy
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Background CT colonography (CTC) is currently indicated in Australia for exclusion of colorectal neoplasia in symptomatic or high risk patients within 3 months of an incomplete colonoscopy. We aim to report findings for exclusion of colorectal neoplasia in symptomatic or high risk patients after failed colonoscopy.

Methods A retrospective review was conducted on all patients undergoing CTC from 1 Jan 2008 to 31 Dec 2009 at MIA Epworth Eastern, Box Hill, Victoria. Information about the timing, quality, complications and findings on CTC was obtained. Medical records were reviewed for colonoscopy indication and findings and patient management algorithm after CTC.

Results During this 2-year period, there were a total of 180 CTC performed. We currently have complete data for 124 patients (69%). Median age was 73 years (24–92); 69% were females. Most common indications for colonoscopy were: altered bowel habit n = 31 (25%), iron deficiency anaemia n = 24 (20%), family history of colorectal cancer n = 18 (15%), polyp/cancer follow-up n = 13 (10%), FOBT/rectal bleeding n = 11 (9%) and abdominal pain n = 11 (9%). Commonest causes of failed colonoscopy were looping 52% and fixed angulation 37%. CTC was performed on the same day as the failed colonoscopy in 67% of patients. CTC had no complications; one patient had suboptimal insufflation during CTC precluding assessment. Eleven polyps were detected in nine patients (7.2%). Polyp sizes were, ≤5 mm n = 1, 6–9 mm n = 4 and ≥10 mm n = 6. Repeat colonoscopy revealed polyps in eight patients; one patient declined colonoscopy. Polyp yield on CTC was highest in patients having polyp/cancer follow-up (5/13, 38%). An obstructing lesion suspicious for malignancy was seen on CTC in four patients; all patients underwent subsequent colectomy. In one patient, the removed segment revealed stenosing diverticular disease and not malignancy. In patients with a normal CTC (58 pts, 47%), no further investigation of the colon was undertaken. In patients with significant diverticular disease (48 pts, 38%) on the CTC, four patients were scheduled for a repeat colonoscopy in ≤3 years and three patients had surgical excision of the affected segment for complicated diverticular disease. Five patients (4%) had significant extra-colonic findings on CTC (Neurofibroma, liver mass, left renal mass, left hydronephrosis and gastric mass with liver metastases). All were referred for appropriate investigation and follow-up.

Conclusions CTC demonstrated high positive predictive value for detecting polyps and lesions. The negative predictive value could not be determined from our study but clinicians were reassured by normal CTC results and did not undertake any further investigation of the colon. Thus CTC was instrumental in the development of a strategic patient management plan.

Influence of eradication of helicobacter pylori on the course of the reflux-esophagitis at the patients with gastroesophageal reflux disease (GERD)
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Introduction In recent years, much attention is paid to the study of GERD. Many issues of GERD, in particular, the communications of HP infection with reflux esophagitis, remain unsolved.

Objective To study the influence of HP eradication on the course of reflux esophagitis (RE) in patients with GERD.

Methods Seventy-three (100%) HP-positive patients with GERD at the stage of reflux esophagitis, median age 39.1 ± 14.8; 33 (45%) of them male and 40 (55%) female, carried out eradication of HP. Before treatment and 6 months after the therapy were conducted: esophageal gastrodudenoscopy with biopsy of distal esophagus and antrum, 2-h pH meter, the five methods detection of HP. A condition of mucosa was estimated by semi quantitative method with calculation of esophagopathic index (EPI) consisting of specific histological signs of esophagitis.

Results Upon initial examination the value of a heartburn in points at GERD in the stage of RE was 3.4 ± 0.07. The pH of gastric corpus mucosa was 1.8 ± 0.07, EPI—2.33 ± 0.09. Eradication of HP was achieved in 45 (61.6%) patients (I group), HP eradication was not achieved in 28 (38.4%) patients (II group). After 6 months of observation heartburn was significantly more likely noted in patients with HP. In 89% of cases against 2% of I group, average values of heartburn in patients of group I was 1.1 ± 0.04, in group II—2.5 ± 0.06 (p < 0.05). The pH of gastric corpus mucosa in patients of group I was 2.9 ± 0.012 vs 1.7 ± 0.012 in patients of group II (p < 0.05). The average value of EPI in group I decreased to 1.1 ± 0.06, while in II group has hardly changed—2.24 ± 0.17 (p < 0.05). It is noted that the severity of heartburn in points had direct correlation with the EPI value (r = 0.87; p < 0.01).

Conclusion The effective eradication of Helicobacter pylori in GERD at the stage of reflux esophagitis contributes to the normalization of acidogenic function of the stomach, which leads to the disappearance of inflammatory changes of the mucosa of the esophagus and the relief of clinical symptoms of RE.

Gas in the portal system and portal vein pyaemia: a rare condition
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Introduction and Purpose Portal pyaemia is an incredibly rare condition. The mortality rate of patients with portal venous gas depends on the underlying cause, but it has been associated with fatal outcome. Factors which may lead to this include intestinal wall alterations, bowel distention, and sepsis.

Methodology We present the case of a 74-year-old lady admitted to critical care, initially presenting with abdominal symptoms over a 1-month period, and a known history of diverticulitis. She was diagnosed as having a portal pyaemia radiologically. We discuss this condition, the mechanism by which it may have arisen in this case and the importance for early surgery.

We retrospectively analyse this case, and examine possible factors which may have had an implication in its pathology, and look at the overall outcome.

Results In order to determine the mechanism behind what occurred, we have to first understand the underlying pathology. It is possible that the ongoing intraabdominal sepsis, caused by the diverticulitis would have also resulted in obstruction, creating distension of the bowel wall and conduction of gas into the porto-mesenteric system. On top of that, the bowel wall was disrupted, demonstrated by gastric ulceration and GI bleeding. In addition this patient also had a pericolic abscess, which may have had an implication in its pathology, and look at the overall outcome.

Conclusion We present this case, examine the mechanisms causing the pathology and the need for early surgery and critical care management.
Spontaneous liver capsule rupture: what is the cause?  
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Introduction  Rupture of the liver capsule is an incredibly rare condition, with a limited number of causes. In each case however, an underlying pathological cause is present. These include malignancy, trauma and ischemia.

Study Objectives  We aim to determine the cause of spontaneous liver capsule rupture, which has never before been reported.

Methods and Results  We retrospectively review the case of a 45-year-old lady, initially admitted to hospital with symptoms of acute cholecystitis requiring ITU admission. A radiological diagnosis of inflammatory changes at the gallbladder bed were made, with a possibly evolving abscess. However when taken for laparotomy, this demonstrated cholecystitis with an inflammatory process involving liver substance, rupture of the liver capsule over the anterior surface of the liver with haematoma and active bleeding.

Discussion and Conclusions  In the case, there was no evidence of malignancy, in the liver or adjacent organs, no history of trauma, CPR or parenchymal injury was reported. We describe this case and mechanisms that may have contributed to spontaneous rupture of the liver capsule with critical care management. This case is important as all other cases of spontaneous liver rupture have a cause associated, unlike this case.

Chemical pleurodesis for the management of symptomatic hepatic hydrothorax  
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Introduction  Hepatic hydrothorax in the setting of decompensated liver cirrhosis is challenging problem. We report the outcome of eight patients with refractory hepatic hydrothorax who underwent chemical pleurodesis with or without video-assisted thoracoscopic surgery (VATS).

Methods  Data for eight consecutive patients presenting to our institution between July 2007 and November 2009 with refractory hepatic hydrothorax who underwent chemical pleurodesis with or without VATS were retrospectively collected. Baseline demographic and clinical characteristics and outcomes after the procedure were analysed.

Results  Mean (SD) age of our cohort was 60.4 (10.2) years and four (50.0%) patients were male. The etiologies of liver cirrhosis were alcoholic (n = 1, 12.5%), HBV (n = 3, 37.5%), HCV (n = 2, 25.0%) and cryptogenic (n = 2, 25.0%). Seven (87.5%) and one patient were Child-Pugh class C and B, respectively. All patients have right sided pleural effusion and ascites refractory to medical therapy. The agents used in chemical pleurodesis were talc in three patients (37.5%), tauridine in two patients (25.0%) and viscum album in three patients (37.5%). The mean (SD) session of chemical pleurodesis was 4.8 (3.4). Six patients remained asymptomatic and hydrothorax free at a median follow-up of 104 (13–577) days after the procedure. However, three patients experienced symptomatic recurrence of hydrothorax 116, 213, and 227 days after the initial procedure. Complications occurred were low grade fever/bleeding.

Conclusion  Refractory hepatic hydrothorax can be controlled with multiple sessions of chemical pleurodesis via chest tube with or without VATS in as many as 75% of patients. However, a proportion of these patients experienced significant procedure related failure and recurrence. The procedure may be considered as a palliative alternative in a limited proportion of patients needing frequent thoracocentesis.

Antenatal screening for hepatitis c and adherence to the national hepatitis C testing policy at a large regional centre (pregnancy study, John Hunter Hospital, NSW)  
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Introduction  In Australia, there are inconsistencies in hepatitis C (HCV) antenatal screening recommendations and practices. We aimed to identify the degree of adherence to National HCV Testing Policy in a large tertiary hospital and to identify clinical practices that could be improved.

Methods  We undertook a retrospective audit of women giving birth at John Hunter Hospital from January to June 2006. Data analysed included HCV risk assessments, HCV antibody and PCR testing, and post-test counselling. Rates of gestational diabetes, pre-term delivery, smoking and drug use were also examined. In addition we assessed the level of subsequent HCV testing in the offspring.

Results  A total of 125 records were examined, of whom 60 patients were identified as high risk. 41/60 (68%) patients had HCV PCR testing performed. A total of 37 HCV coded patients were examined. Of this 13 (35.1%) were PCR negative. 11/22 (50%) HCV PCR positive patients were referred to Specialist Viral Hepatology services for further evaluation. In only 2 of these patients was advice regarding follow-up testing of their children documented.

Conclusion  In this cohort, identification of HCV risk factors or a positive HCV antibody test was not necessarily backed by appropriate PCR testing, specialist referral or counselling regarding testing of children. We plan to implement a structured educational program to enhance adherence to the National Hepatitis C policy.

Symptoms of constipation in adult population of Moscow city (results of epidemiological study)  
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Introduction/Aim  There is lack of the epidemiological studies evaluating the prevalence of constipation symptoms in Russia. Our aim was to evaluate the prevalence of constipation symptoms, their dependence on sex, dietary habits, physical activity and other factors.

Methods  Data were collected from 1189 randomly selected subjects >18 y.o. with the assistance of the yellow pages. One hundred adults both sex within age decade were questioned using specially designed Questionnaire. Statistical difference was analysed using χ2 criterion.

Results  Data about prevalence of certain symptoms are included in table:
Majority of people has persistent >3 month symptoms. Though 16.7–24.8% subjects could not answer how long they had had a symptom. Prevalence of constipation (>2 symptoms) appeared to be significantly (p < 0.001) lower in subjects who have BMI ≤ 25 kg/m² (14.8 against 29.0%). Consumption of fruits and vegetables, cereals ≥ every other day, bread with meal and/or bran, daily drinking ≥ 1 L a day, physical activity > once a week, number of deliveries in female ≤ 1 was associated with significantly lower prevalence of constipation: 19.9 against 34.7%; 19.4 against 28.1; 20.7 against 37.2%; 16.5 against 26.5%; 26.2 against 36.5% respectively. Number of daily food intake did not influence on constipation prevalence.

Summary/Conclusion
The prevalence of all symptoms of constipation is significantly higher in female. Consumption of fruits and vegetables, cereals, bread with meal and/or bran, physical activity are the factors which decreasing prevalence of constipation.

Primary biliary cirrhosis and ursodeoxycholic acid: treatment outcomes in the ACT referral region

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Background
In patients with early-stage primary biliary cirrhosis (PBC), ursodeoxycholic acid (UDCA) therapy has been promoted to improve liver biochemistry and delay histological disease progression. This series seeks to evaluate treatment outcomes of UDCA in a demographically discrete population of PBC patients in the Australian Capital Territory (ACT) referral region.

Methods
A retrospective case series of 56 known cases of PBC in the ACT region was developed. Patient demographics, clinical, laboratory and histological features at diagnosis, response to UDCA therapy, details of maintenance therapy, co-existing autoimmune diseases, and treatment outcomes were recorded. Diagnosis of PBC was confirmed on the basis of combined biochemical, histological and anti-mitochondrial antibody (AMA) results. Patients with co-existing liver disease were excluded from the series.

Results
An all female series of 39 patients with PBC was identified, with a further 17 patients (including one male) lost to follow-up. Average age at diagnosis, and duration of disease, were 54.8 and 9.2 years respectively. All patients received UDCA for a period of between 2 and 17 years, with 18 patients undergoing therapy for 10 years or more. Histological assessment by liver biopsy was undertaken in 37/39 patients, while 33/39 patients were AMA positive. Measured treatment outcomes indicated two PBC related deaths, one unrelated death, and three liver transplantations. A further two patients developed signs of chronic liver disease, whilst the remaining 32 patients were assessed to be stable.

Conclusions
Critical endpoints of decompensated liver disease, transplantation, or PBC related death were reached in 15.4% (6/39) of patients, while 82.1% (32/39) of patients were clinically and biochemically stable. UDCA management in this series was associated with treatment outcomes comparable to established best practice.

A regional experience of oriental cholangiohepatitis
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Introduction
To discuss the pathogenesis, complications, diagnosis and management of oriental cholangiohepatitis in a 35 year old Asian female who presented to the Launceston General Hospital in early 2010.

Methods
Case notes, pathology and radiological investigations were obtained for the patient in question from the 26/1/2010 to 23/4/2010 at the Launceston General Hospital. Review of the patient was conducted at six weekly intervals through clinic to assess response to current management. A PubMed and UpToDate search on the current medical literature was performed.

Results
The patient’s biliary stones and strictures have been managed with ERCP alone. This has been associated with an improvement in liver function tests and biliary dilatation as assessed on MRCP. At present following a multidisciplinary meeting she is awaiting further ERCP intervention for intra—hepatic duct stones. The literature suggests rising incidence outside of Asia consistent with immigration. Pathogenesis is thought to relate to parasitic infection (clonorchis, opisthorchis, and fasciola). Subsequent complications include biliary tree strictureing, pigment stone formation and recurrent cholangitis. Treatment options include endoscopic, surgical and interventional radiology. Studies have suggested equivalent success rates with ERCP Vs. surgical intervention for the definitive management of this condition.

Conclusion
Our patient has not had further episodes of cholangitis following endoscopic management. There is no randomized controlled trial evidence on appropriate management for these patients. Whilst there is increasing evidence for ERCP in the definitive management of this condition, a multi—disciplinary tailored approach to each patient is still recommended.

A registrar’s perspective on gastroenterology advanced training in regional Australia
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Introduction
There are 14 first-year gastroenterology trainees in Victoria and Tasmania, two of which spend the entire year in a regional setting. As one of the regional trainees I reviewed my training to assess the exposure to all aspects of gastroenterology.

Methods
Inpatients, referrals, clinic patients and endoscopies performed (supervised assisted/unassisted) kept on a computer database were retrieved from 18/1/2010 to 16/5/2010 at Launceston General Hospital.
Information was then sorted into groups according to diagnosis, reason for referral and procedure performed with subsequent findings to assess case mix.

Results From the 18/1/2010 to 16/5/2010 there have been 127 inpatients, 132 referrals, 181 clinic patients, and 250 endoscopic procedures performed (165 unassisted/85 assisted). The predominant inpatient groups were gastrointestinal bleeders 31%, biliary disease 31% and inflammatory bowel disease 9.5%. Two of 10 patients who were found to have peptic ulcer disease as the cause of their gastrointestinal bleeding required surgical intervention to achieve haemostasis. Biliary disease comprised primarily of cholangitis 30%, choledocholithiasis 30%, and biliary obstruction secondary to malignancy 20%. The clinic patients comprised predominantly of inflammatory bowel disease 14%, hepatitis B/C 12% and gastrointestinal bleeding 12%. With respect to hospital referrals, the two main groups were gastrointestinal bleeding 27% and biliary disease 16%. Endoscopies performed assisted include seven flexible sigmoidoscopies, ten colonoscopies and 10 flexible sigmoidoscopies. There were 29 after hour endoscopies including 18 gastroscopies, eight ERCPs and three colonoscopies. Endoscopies performed unassisted were 120 gastroscopies, 35 colonoscopies and 10 flexible sigmoidoscopies. There were 29 after hour endoscopies including 18 gastroscopies, eight ERCPs and three colonoscopies.

Conclusion The regional advanced trainee experience at Launceston General Hospital encompasses a wide spectrum of gastroenterological diseases. The reasons for a high proportion of biliary disease seen in this unit are as yet unclear.

A look back at collagenous colitis: a 17-year retrospective study

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Introduction Initially described in 1976, collagenous colitis is the more common entity of microscopic colitis and has been increasingly identified as the cause of chronic diarrhoea predominantly affecting elderly females. Whilst the aetiology remains unclear, possible precipitants include bacterial toxins and medications such as NSAIDs. With an anecdotal increase here in Northern Tasmania we decided to take a look back on our experience with collagenous colitis.

Methods Northern Tasmania is serviced by the Launceston and Northern Tasmania histopathology departments. The database generated a list of patients with a histological diagnosis of microscopic colitis from 16/12/1993 to 10/3/2010. A retrospective review was then conducted.

Results From January 1993 to March 2010, 53 patients aged between 30 and 82 years where diagnosed with collagenous colitis. The ratio of collagenous colitis to lymphocytic colitis was 10.6:1. The average age was 64.6 years with an M: F ratio of 1: 5.25. Of the 53/53 patients with a documented indication for colonoscopy, 48 (94%) had diarrhoea, 2 (4%) constipation and 1 (2%) fluctuating bowel habit. Those with a documented clinical diagnosis prior to endoscopy, 14/38 (37%) had an infective/post infectious gastroenteritis, 9/38 (24%) irritable bowel syndrome, 4/38 (10%) inflammatory bowel disease, 3/38 (8%) antibiotic related diarrhoea, 3/38 (8%) functional and 5/38 (13%) other. Only 15/53 (28%) patients had documented non steroid use as a possible precipitant. Two patients were found to have bacterial gastroenteritis on stool microscopy. Treatment consisted of 21/42 (50%) with steroids, 21/42 (50%) anti diarrhoeal, 17/42 5–ASA (40%), and 9/42 (21%) antibiotics. Two patients went on to colostomy for control of symptoms. Whilst the number of patients with collagenous colitis increased from 1993 through to 2004, these numbers then fell and continue to do so.

Conclusion In Northern Tasmania collagenous colitis was much more common than lymphocytic colitis and predominantly affected elderly females. The reasons for a doubling of patients diagnosed with collagenous colitis from the early 1990s to the turn of the century and subsequent fall is yet to be elucidated.

Prevalence of colon diverticulosis, colorectal polyps and colorectal cancer among adult population of Moscow city with chronic constipation and alarm symptoms (results of the epidemiological study MUZA)

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Introduction/Aim There is lack of epidemiological studies regarding colorectal pathology in Russia. We aimed to assess prevalence of colon diverticulosis (CDiv), colorectal polyps (CP) and colorectal cancer (CRC) among adult population of Moscow with chronic constipation (CC) and alarm symptoms (AS).

Methods Data were collected from 1189 randomly selected subjects >18 y.o. with the assistance of the yellow pages. One hundred adults both sex within each age decade: 18–24, 25–34, etc were questioned using specially designed Questionnaire, which included questions for criteria of CC and AS’s (rectal bleeding, inexplicable weight loss, permanent intensive abdominal pain, fever occurring 3 months before questioning and family history of CRC). Subjects with either CC or AS(s) were offered to do recto- and colonoscopy.

Results After the survey 300 subjects were supposed to do endoscopy. Two hundred and twenty-two (74%) subjects agreed. Percentage of those who agreed was slightly higher in female: 76.7 against 68.1% in male. Any of the AS(s) was registered in 11.3%. Most frequent ASs were rectal bleeding (4.9%), family history of CRC (3.5%) and abdominal pain (3.5%). Rate of any of the AS, rectal bleeding and weight loss was significantly higher in subjects >55 y.o. Prevalence among all recruited subjects: CDiv 16.2%, CP(s) 10.8%, CRC 4.5%. Prevalence of CRC among subjects >55 y.o. with rectal bleeding and subjects >55 y.o. with family history was significantly higher than among all: 25.0% and 21.1% respectively. The highest predictive value for CRC had the combination of the AS’s: rectal bleeding + family history—50%, the lowest—abdominal pain—4.8%.

Conclusion Subjects over 55 y.o. with family history of CRC and subjects over 55 y.o. with rectal bleeding have high risk of CRC. The combination of symptoms: rectal bleeding + family history of CRC has the highest predictive value for CRC.

Reprocruiting to a functional dyspepsia clinical trial:—where have all the patients gone?

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Study Objectives Functional Dyspepsia (FD) is regarded as extremely common. However only marginally effective therapies for FD exist, therefore clinical trials aim to recruit large numbers. We recently experienced
great difficulty recruiting FD patients for a short trial and therefore examined in detail the precise reason(s) for (non)eligibility and/or (non)participation to better define the apparent scarcity of FD patients.

**Methods** Patients with symptoms of FD were sought from primary and hospital care settings by direct identification, coding searches and endoscopy reports. Available records were reviewed and if suitable, the patient was interviewed by phone and/or the patient information sheet (PIS) was mailed to them. Each patient who was eligible and consenting, was enrolled.

**Results** Four hundred and fifty-six patients (65% female, aged 50 ± 1 years) with FD-like symptoms were identified since December 2008; 18% primary care, 78% hospital care, 4% uncertain. Only 22 (5%) of these were eligible for, and consenting to, enrolment. Three hundred and three (73%) patients were regarded as unsuitable, as per table below. A further 101 (22%) patients are yet to be contacted or are still considering participation.

|                | Pre-screening (n = 202) | Initial contact (n = 55) | After phone interview (n = 24) | After PIS sent (n = 52) |
|----------------|-------------------------|--------------------------|--------------------------------|------------------------|
| Unable to (re) contact | 17 (8%)                 | 3 (5%)                   | –                              | 9 (17%)                |
| Travel distance/ Moved | 24 (12%)                | 1 (2%)                   | –                              | 2 (4%)                 |
| Age (too old/ young)    | 28 (14%)                | 4 (7%)                   | 4 (17%)                        | 2 (4%)                 |
| Other GI disorders      | 27 (13%)                | 6 (11%)                  | 4 (17%)                        | 3 (6%)                 |
| Other co-morbidities    | 125 (62%)               | 6 (11%)                  | 15 (63%)                       | 4 (8%)                 |
| Not now symptomatic     | 3 (1%)                  | 14 (25%)                 | 4 (17%)                        | 4 (8%)                 |
| Interpreter required    | 28 (14%)                | 4 (7%)                   | –                              | 1 (2%)                 |
| Excluded Meds           | 2 (1%)                  | 5 (9%)                   | 4 (17%)                        | 2 (4%)                 |
| Not interested          | –                       | 14 (25%)                 | 1 (4%)                         | 20 (38%)               |

NB: Some patients had multiple reasons for unsuitability.

**Conclusions** Whilst symptoms consistent with FD are common, the prevalence of ‘true’ FD is lower than currently believed. Many patients with these symptoms have significant co-morbidities (especially diabetes (n = 22) and cancer (n = 18)) suggesting that much FD may in fact be secondary to other factors. This makes a secure diagnosis of true FD for clinical trial purposes problematic.

**Serum hepcidin profiles in patients with advanced liver cirrhosis: relationships with iron markers and disease severity**

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**Background** Altered iron metabolism is common in patients with advanced liver disease and we have recently shown that elevated serum ferritin (SF) concentration adversely influences survival before liver transplantation (Walker et al, *Hepatology* 2010; 51(5):1683–91). Hepcidin, the principal iron regulatory hormone, is synthesised in the liver and negatively regulates intestinal iron absorption and the release of iron from macrophages. Whether altered hepcidin homeostasis contributes to the pathogenesis of cirrhosis associated iron loading (CAFEL) and elevated serum ferritin concentration in advanced liver disease has been difficult to study because of the absence of a reliable technique to quantify serum hepcidin.

**Aims** (1) To evaluate serum hepcidin concentration in patients with advanced liver disease and (2) To determine the relationships between serum hepcidin, SF and hepatic iron concentration (HIC) in patients with cirrhosis to gain insights into the pathogenesis of CAFEL and the cause of the elevated SF in patients with end stage liver disease.

**Patients & Methods** Thirty-nine clinically stable patients with liver cirrhosis undergoing evaluation for orthotopic liver transplantation were recruited in this prospective study. Severity of liver disease was assessed using the MELD score. Following overnight fasting, blood was drawn for routine biochemistry, serum iron indices and hepcidin measurements. Serum hepcidin concentration was quantified by an on-line extraction method coupled to high performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS) using an appropriate radiolabelled internal standard. Liver iron concentration was measured using a non-invasive MRI technology (Ferriscan®).

**Results** The majority of patients were male (male: female; 35:3), with a mean age of 52 ± 7.5 years. The aetiologies of the liver disease included alcohol (ALD) (n = 7), hepatitis C virus (HCV) (n = 9), combination HCV/ALD (n = 12), non-alcoholic fatty liver disease (NAFLD) (n = 4), chronic hepatitis B (HBV) (n = 3) and cholestatic liver diseases (n = 3). Mean MELD score was 13. Mean serum hepcidin concentration was 15 ± 1.9 (range <5 to 56.3) ng/ml. Serum hepcidin concentration was below the lower limit of detection (5 ng/ml) in 18 (47%) patients, consistent with reduced hepatic synthesis, but did not correlate with the underlying MELD score (r = -0.08, p = 0.63). Serum hepcidin correlated with SF concentration (Spearman r = 0.74, P = <0.0001), and, when considered in tertiles (<200 μg/L, 200–400 μg/L, >400 μg/L), patients with SF above 400 μg/L had significantly higher hepcidin compared to those with ferritin lower than 200 μg/L (27 vs 8 ng/ml, P < 0.0001). The median HIC was 13 μmol/l dry tissue (range 5–113 μmol). HIC was <20 μmol/l in 29 patients (76%), 20–40 μmol/l in five patients (13%) and >40 μmol/l in one patient (3%). There was no apparent association between serum hepcidin concentration and HIC (r = 0.05, P = 0.75), although patients with higher SF (>400 μg/L) had higher HIC (r = 0.68, P = 0.06).

**Conclusion** Increased SF in patients with cirrhosis reflects both increased hepatic iron and necroinflammatory activity. The concordant increase in hepcidin with SF is most likely due to hepatic necro-inflammatory activity and local cytokine effects. Low serum hepcidin is common in advanced liver disease and this may be an important pathogenic mechanism associated with CAFEL.

**What is the role of gastrointestinal endoscopy in elderly patients with unintentional weight loss?**

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Gastrointestinal endoscopy has a good diagnostic yield for the investigation of unintentional weight loss in the general population, however in the elderly additional age-related factors may be responsible for loss of weight. The aim of this study is to assess the diagnostic yield of endoscopy in a cohort of elderly patients undergoing investigation for involuntary weight loss.

We conducted a retrospective analysis of consecutive endoscopies performed to investigate unintentional weight loss during a 10-year period at Flinders Medical Centre and Repatriation General Hospital, Australia.
the Repatriation General Hospital in South Australia. Information regarding the indication for the procedure, age, gender, findings during the study and corresponding histopathology were gathered. Patients aged less than 65 and those with incomplete studies, other than for an occluding neoplasm, were excluded.

A total of 513 procedures were reviewed, 360 gastroscopies and 153 colonoscopies. Median age of patients was 80.4 (range 65–95) for the gastroscopy group and 78.7 (range 65–92) for the colonoscopy group. There was no significant difference in the percentage of males in each group (47% vs 50.3%). Only 3.6% (5/140) of gastroscopies performed for weight loss alone revealed a positive finding, whilst if an additional indication was present the yield was significantly higher at 13.2% (29/220) (p < 0.003). In our colonscopic group the yield was 7.14% (5/70) for those with weight loss alone, and 18.1% (15/83) for those with an additional indication. This difference was statistically significant (p < 0.05). There was no statistically significant difference between the overall diagnostic yield of gastroscopy (9.4%) vs. colonoscopy (13.1%) (p > 0.22).

Our results suggest that the overall yield of endoscopy for the investigation of unintentional weight loss is comparatively lower in elderly patients. This may reflect the fact that in the elderly there are multiple additional factors for weight loss which may not be amenable to endoscopic diagnosis. Our findings also suggest that in elderly patients with isolated weight loss, the yield of endoscopy is low and should for the most part be limited to patients with additional symptoms or specific findings.

A new, rapid magnetic resonance imaging method for exclusion of hepatic fibrosis and diagnosis of cirrhosis

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Current non-invasive methods (hepascore, Fibroscan) discriminate poorly between normal, fibrotic and cirrhotic states when compared with liver biopsy-based assessment of fibrosis. The aim of this study was to evaluate a new, rapid magnetic resonance imaging fibrosis (MRIF) detection method for accurate diagnosis of metavir F0 or F4 states. The technique is computer analysed and independent of radiological interpretation.

Methods Forty-nine subjects who underwent liver biopsy (metavir fibrosis scores F0–14, F1–13, F2–5, F3–9, F4–8) for a variety of indications (nonalcoholic fatty liver disease-14, chronic hepatitis C-9, chronic hepatitis B-4, other-22) were recruited over a 12-month period. Subjects underwent clinical evaluation, anthropometric (height, weight with derived BMI) and biochemical measurements (liver biochemistry, hepascore). Fibroscan measurement using a standard probe and MRIF scanning with a novel fibrosis protocol were performed by operators blinded to liver histology. The MRIF protocol used high resolution, T2-weighted breath-hold (5 min) combined with fat and iron detection sequences (10 min), followed by post-processing image texture analysis. A generalized linear model was developed relating the MRI derived parameters and age to biopsy grade. Liver biopsies were assessed by a blinded, experienced hepatopathologist. Receiver operating characteristic (ROC) curve analysis was undertaken using GraphPad Prism.

Results Twenty-three females and 26 males of mean age 51 ± 14 years were recruited. Mean BMI was 28.4 ± 4.62 kg/m². One subject had unsuccessful Fibroscan acquisition and one subject did not complete the MRI protocol. ROC analysis of F0 vs F1–4 demonstrated AUC for hepascore, Fibroscan and MRIF of 0.85 (CI 0.62–1.00), 0.95 (CI 0.87–1.00), and 0.87 (CI 0.72–0.95), respectively.

Summary

Using a standard MR scanner, the MRIF method is able to noninvasively and reliably assess in a 15-min examination the presence or absence of the F0 and F4 fibrotic states.

Delayed cholecystectomy contributes to recurrent gallstone related complications

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Aim This retrospective study aimed to assess the impact of delayed cholecystectomy on the recurrence rates of extra-cholecytic gallstone related disease in patients presenting to a large regional centre.

Methods A systematic search of the hospital’s medical database was performed to identify all patients admitted with an episode of extra-cholecytic gallstone related disease over a 2-year period between the dates of July 2007 to July 2009. The search terms used included ‘obstructive jaundice’, ‘ascending cholangitis’ and ‘gallstone pancreatitis’, and all medical records were reviewed by the authors to ensure an accurate diagnosis. Patients identified in the database search were included in the study if they had suffered a further gallstone-related complication or undergone a cholecystectomy during the 2-year study period. Clinical details regarding initial presentation, endoscopic retrograde cholangio-pancreatography (ERCP) intervention, time to cholecystectomy and time to recurrent gallstone-related complication were recorded.

Results During the 2-year period reviewed by the study 40 patients were identified as having fulfilled the inclusion criteria. The average waiting time for cholecystectomy amongst all patients following their initial presentation was 92 days (±90) with only eight patients (20%) having surgery within 2 weeks of their initial admission. Ten patients (25%) suffered a further episode of gallstone related disease requiring hospital admission while awaiting cholecystectomy with a mean time to recurrent complication of 120 days (±96 days). Of the 14 (23%) patients who underwent initial ERCP only two (5%) suffered a recurrent complication.

Conclusion This single centre retrospective series identifies a significant delay to definitive cholecystectomy amongst a cohort of patients with an initial presentation of extra-cholecytic gallstone related disease. Furthermore it highlights the significant risk of recurrent complications faced by these patients and the importance of prompt cholecystectomy.

Liver elastography in cardiac disease (LECD) study

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Background Cardiac failure is associated with liver function abnormality and fibrosis which is often difficult to assess with liver biopsy. Liver elastography has not been evaluated in cardiac hepatopathy. The primary objective of this study was to evaluate the influence of cardiac liver congestion on liver elastography as measured by Fibroscan in cardiac failure.

Methods The study recruited patients with cardiac failure, as defined by echocardiogram LVEF <40% within 6 months undergoing right heart
catheter (RHC) at St Vincent’s Hospital, Sydney. Controls with no evidence of cardiac or liver disease were recruited from the outpatient clinic. All participants underwent evaluation with: Fibroscan, hepatitis screen, noninvasive serum liver fibrosis markers (Hepascene), proBNP and ultrasound. Comparison was made using Chi-squared, Mann-U-Whitney and Spearman’s correlation, where appropriate.

Results To date a total of 27 individuals have been recruited into the study; RHC group n = 15 (five females) and control group n = 12 (six females). There was no significant difference between groups in mean age (49 Vs 45 years; p = 0.42). RHC patients compared with controls had higher GGT (94 Vs 19 U/l; p = 0.001), alkaline phosphatase (AP) (117 Vs 70 U/l; p = 0.005) and AST (32 Vs 21 U/l; p = 0.01). The median right atrial pressure at catheterisation was 10 cm H2O (range 2–18). The median Fibroscan score was significantly higher in RHC versus control group (10.2 Vs 4.5 KPa; p = 0.002). The proBNP was significantly higher in RHC compared with controls (2614 vs 61 ng/ml; p = 0.001). Combining both groups, Fibroscan was significantly correlated with proBNP (Spearman’s r = 0.60; p = 0.05) and right atrial pressure (r = 0.57; p = 0.02). There was also a strong correlation between GGT (r = 0.72; p < 0.001) and AP (r = 0.62; p < 0.001). There was no correlation with ALT/AST.

Conclusion Liver stiffness using tissue elastography was significantly increased in the cardiac failure (RHC) group. This likely relates to hepatic congestion associated with increased right heart filling pressure (RA pressure) and congestive cardiac failure, as measured by proBNP. It is unlikely that Fibroscan would give an accurate measure of liver fibrosis in context of cardiac hepatopathy.

**Standardising bowel care assessment & management to promote best nursing practice in the clinical setting**

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**Introduction** Bowel management is frequently considered a taboo subject with patients feeling uncomfortable discussing regular habits and symptoms. However whilst the management of bodily functions remains one of the basics of care provision, limited research, policy or clinical guidelines exist to provide direction to assess or plan effective care.

**Methods** A search across the Area Health Service revealed limited number of existing nursing policies and guidelines relating to bowel care management. A staff knowledge survey regarding bowel care management and medical record audit were done. We assessed baseline knowledge and current gaps in clinical practice. A specialist nurses group developed visual aids (flip chart, bowel assessment and management forms and cue cards) and placed these in key health care locations along with Bristol Stool posters. A 6-month pilot study with education sessions was conducted followed by a repeat of the initial assessment to assess the success of the intervention.

**Results** Staff surveys and chart audits before and after the intervention demonstrated a vast improvement in the knowledge and application of bowel care strategies. Although 63% of staff were aware that patient bowel actions should be documented daily, only 15% of audited charts identified compliance. In contrast, Post implementation auditing confirmed over 80% compliance in documented daily bowel actions. Documentation of bowel management strategies in notes improved from 32% to 60%. The prescribing of stool softeners and bowel management strategies in patients receiving opiates improved from 14% to 54%.

**Conclusion** Visual aids and cue cards combined with education sessions over 6 months have simplified assessment and dramatically improved bowel care documentation and management. This intervention has subsequently been successfully implemented in 190 units across Hunter New England Area Health.

**Effects of metoclopramide and erythromycin prokinetic treatment on plasma motilin concentrations in critically ill patients**

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**Introduction** Feed intolerance is common in critically ill patients and is treated with either metoclopramide or erythromycin. The loss of prokinetic effect from these agents, however, is observed within 5–7 days of therapy (Nguyen et al, Crit Care Med 2007). Recent data suggest that higher plasma concentrations of erythromycin (a motilin agonist) are associated with lower successful prokinetic treatment in these patients (DDW 2009). Data relating the effects of metoclopramide and erythromycin on plasma motilin concentrations are lacking.

**Hypothesis** The rapid loss of motor effects after prokinetic therapy in critically ill may be related to high motilin concentrations and potentially down regulation of motilin receptor (Lamian et al, Mol Pharmacol 2006).

Aims To evaluate the impacts of metoclopramide and erythromycin prokinetic treatment on plasma motilin concentrations in critically ill patients with feed intolerance.

**Methods** Fifty-five feed-intolerant (defined as gastric residual volume [GRV] >250 ml) mechanically ventilated, medical critically ill patients (37 M, 50 ± 2 years; APACHE II score: 22.9 ± 0.7) were given either metoclopramide 10 mg QID (n = 27) or erythromycin 200 mg BD (n = 18). Success of enteral feeding, defined as 6-hourly GRV ≤250 ml with a feeding rate ≥40 ml/h, was determined over 7 days. Plasma motilin concentrations were measured at 1 and 7 h after the first prokinetic dose using a radioimmunoassay technique.

**Results** On Day 1, plasma motilin concentrations significantly increased 7 h after the administration of metoclopramide (1–7 h post-dose; 89 ± 15 to 111 ± 19 pg/ml, P = 0.02) but not erythromycin (1–7 h post-dose: 64 ± 8 to 65 ± 6 pg/ml, P > 0.05). Plasma motilin concentrations in patients treated with metoclopramide were significantly higher 7 h post-dose (111 ± 19 vs. 65 ± 6 pg/ml, P = 0.02). Patients who failed to respond to either prokinetic therapy tend to have higher plasma motilin concentrations than those who had successful treatment (1 h post-dose: 116 ± 28 vs. 69 ± 9 pg/ml, P = 0.05; and 7 h post-dose: 120 ± 30 vs. 76 ± 10 pg/ml, P = 0.09; failed vs. successful treatment respectively). There was a weak negative correlation between plasma motilin concentrations at 7 h post-dose and days taken to loss of clinical prokinetic effect (P = 0.04, r = −0.28).

**Conclusions** In critical illness, prokinetic treatment with metoclopramide, but not erythromycin, is associated with an increased release of plasma motilin, leading to greater plasma motilin concentrations in these patients 7 h after dosing than those treated with erythromycin. Findings that high motilin concentrations are associated with poorer response and a shorter period to loss of clinical motor effects suggest aberrant plasma motilin responses to prokinetic therapy may contribute to the development of tachyphylaxis and may explain the poorer prokinetic benefit of metoclopramide as compared to erythromycin.

**Gonadal mosaicism as a genetic in familial aetiology adenomatous polyposis**

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Familial adenomatous polyposis (FAP) is an autosomal dominant disease caused by mutations of the APC gene. However, approximately 25% of affected individuals appear to occur de novo with no apparent family...
history. Gonadal mosaicism has been hypothesized as a possible genetic aetiology. However, the incidence of this is unknown in FAP, and the practice of exclusion testing and counseling in de novo cases differs across various Family Cancer Clinics. This study aims to quantify the possibility of gonadal mosaicism as a genetic aetiology in FAP.

A systemic analysis of the genetic files of 86 families with FAP at the Royal Melbourne Hospital to identify de novo cases of FAP with a known APC mutation. Available colonoscopy reports, pathology results, genetic mutational analysis results and outpatient letters were reviewed to confirm the diagnosis of FAP. Once the diagnosis was ascertained, the family pedigree was analysed to isolate apparent de novo cases with an identified mutation. The extent to which the adult siblings and parents of these probands have been considered for polyposis and genotyping was evaluated.

This study identified 18 cases where gonadal mosaicism was potentially the mode of genetic inheritance. Of these 18 cases, there are a total of 65 siblings of the de novo proband at risk of FAP given the possibility of gonadal mosaicism. However 48 siblings did not undergo exclusion testing. None of the families were counseled specifically for the possibility of gonadal mosaicism. Out of the 18 identified cases, there are eight de novo probands that are still alive. Of these eight de novo probands, there are 27 siblings at risk of FAP given gonadal mosaicism. However, 16 of the 27 siblings did not undergo exclusion testing.

Exclusion of gonadal mosaicism in families with apparent de novo presentations has important implications for genetic counseling practice and clinic planning.

**Laxative use, pain, stool form and frequency: is there any correlation between them in patients with severe constipation?**

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Slow transit constipation is commonly associated with hard stools and a reduced stool frequency. The presence of pain is typically associated with constipation pre-dominant irritable bowel syndrome. For the most part patients’ constipation symptoms are based upon responses to questionnaires or interviews by doctors. The potential impact of laxative use upon symptoms is rarely commented upon. Our Aim, in patients with severe constipation, was to detail symptoms on a day-to-day basis in the presence of laxative use and determine if increased laxative use correlated with increased stool frequency, pain symptoms and loose stool.

**Methods** One hundred and seventy patients were referred to a tertiary referral centre for inclusion in a clinical trial for the treatment of severe constipation. Each of these patients completed a 3-week stool diary and 105 completed colonic transit study measured scintigraphically (normal <9% retention at 72 h). On a daily basis the diary detailed stool frequency and form (Bristol stool scale), laxative use (type and dose) and pain scores (0 = none; 3 = prevent normal activity). Three-week stool diaries have been summarised as mean scores (pain, stool form and frequency) or proportion of days (laxative use). Pearson correlation has been used to assess the association between these four parameters.

**Results** Daily laxative use demonstrated a bimodal distribution with 22% rarely using laxatives and 38% using laxatives on a daily basis. The remainder were evenly distributed between two extremes. Seventy-three per cent of patients reported a bowel motion at least once every 2 days with 20% reporting loose stool on a daily basis. Only 12% commonly reported hard stool. Pain impacting upon day-to-day life was reported by 35%. Increased laxative use was positively correlated with increased stool frequency (r = 0.3; P < 0.001), loose stool (r = 0.3; P < 0.001) and increased pain scores (r = 0.2; P = 0.04). Ninety-four patients had delayed transit (retention at 72 h; 73 ± 23%). When dealt with as a separate entity these patients with demonstrable slow transit demonstrated the similar characteristics as those described above.

**Conclusion** These data demonstrate that in the normal day-to-day life of patients with severe constipation frequent, loose stools and pain are all commonly reported. Laxative use may be one factor driving these symptoms. Supported by NHMRC.

**Devonshire colic: an unusual cause of recurrent abdominal pain**

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Lead poisoning also known as Devonshire colic is an uncommon cause of abdominal pain. We report a case of lead poisoning in a 46-year-old man who presented with inflammatory narrowing of the terminal ileum (TI) and recurrent abdominal pain. The abdominal pain and inflammation settled following chelation therapy and normalisation of lead levels.

A 43-year-old male smoker first presented in August 2007 with fevers, diarrhoea, vomiting and severe upper abdominal pain in the setting of markedly raised inflammatory markers and negative stool cultures. His maternal cousin has Crohn disease (CD). Gastroscopy showed mild inflammation and an abdominal CT demonstrated an abnormal segment of TI c/w a viral enteritis. Colonoscopy in Jan 2008 was normal with nonspecific ileitis, but an MRI enteroclysis in March 2008 revealed 40 cm of thickened inflamed TI and duodenum c/w CD.

His symptoms continued to progress with ongoing diarrhoea and central abdominal pain and associated weight loss of 20 kg over 6 months. There was no per rectal bleeding. In early 2008, he was commenced on steroids and immunomodulators with some resolution of symptoms. He developed intolerance to the immunomodulator. He continued to have significant central abdominal pain with new perianal fissures despite being on 15 mg prednisolone. He was commenced on infliximab therapy which resulted in decrease in bowel frequency and weight gain. Despite being on infliximab and MRI enteroclysis in 2009 revealing improvement in terminal ileal inflammation, he continued to have abdominal pain. This lead to further investigations including lead levels that were x100 upper limit of normal. Further focused history revealed growing up with a petrol bowser as well as work with alloys. Chelation therapy led to normal lead level of 2 ug/100 ml and complete resolution of symptoms and improvement in energy levels. A follow up colonoscopy in 2010 with terminal ileal biopsy revealed active chronic ileitis.

Features of lead poisoning include basophilic stippling of red cells, discoloration of gums (Burton’s line) and abdominal pain (saturnine colic). This case alerts us to the need for a detailed occupational history that would aid in the diagnosis of an uncommon condition in the setting of recurrent presentations of abdominal pain with a proven diagnosis of a relatively common condition that is not responding to adequate management. Vigilance to the possibility of lead poisoning may have avoided overtreating the patient.
Liver stiffness as a non invasive evaluation of non alcoholic fatty liver disease (NAFLD) and liver fibrosis in patients with type 2 diabetes mellitus (T2DM)

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While T2DM is a strong risk factor for NAFLD the prevalence of hepatic fibrosis in T2DM patients is unknown due to the absence of an appropriate screening tool. FibroScan assesses liver fibrosis via non-invasive measurement of liver stiffness and may be a suitable tool to screen an asymptomatic at-risk population for the presence of liver fibrosis. We aimed to (1) evaluate the prevalence of liver fibrosis in patients with T2DM using FibroScan and (2) assess its accuracy compared to liver biopsy.

Method T2DM subjects with no known or other risk factors for liver disease were recruited from The Alfred Diabetes clinic. FibroScan was performed according to accepted guidelines, as well as hepatic ultrasonography and laboratory parameters including Hepascore. Exclusion criteria included alcohol intake >20 g/day, cardiomyopathy, ultrasonographic evidence of hepatic venous congestion, and age <18 or >80 years. Subjects were divided into two groups; Group A had a FibroScan ≥7.5 KPa and Group B < 7.5 KPa. Group A subjects were reviewed in The Alfred Liver clinic and considered for liver biopsy.

Results Eighty-one subjects were included with 27/81 (33%) in Group A. The groups were well matched for diabetes duration, alcohol intake and gender albeit. Group A subjects were slightly younger (median age: 61.5 vs 65.9 years; p = 0.057). Group A subjects were more likely to have a higher BMI (36 vs 31; p < 0.0001), waist circumference (120 vs 109 cm; p < 0.0001), ultrasonographic hepatic steatosis (p = 0.002), GGT level (57.8 vs 28.7 U/l; p < 0.0001), ALT level (37.6 vs 25.2 U/l; p = 0.007), Hepascore (0.61 vs 0.43; p = 0.01) and Hba1-c (8.2 vs 7.8%; p = 0.037). 14/27 (52%) in Group A subsequently underwent liver biopsy with 10/14 (PPV 71%) displaying histological evidence of significant liver fibrosis (F2–4 Brunt score) and 14/14 (PPV 100%) with histological evidence of non-alcoholic steatohepatitis (NASH).

Conclusion Our data suggest that a significant proportion of T2DM subjects have moderate-advanced hepatic fibrosis and that FibroScan may be a useful screening tool in the evaluation of both hepatic fibrosis and NASH in a T2DM population. However, further studies are needed including evaluation of FibroScan’s NPV for significant hepatic fibrosis and NASH.

A new technique for open biliary bypass: hepatico-cholecysto-enterostomy

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Introduction Hepatico-jejunostomy is the standard Biliary Bypass technique for peri-ampullary cancer if either trial dissection reveals unresectable disease or stent placement fails. With a bulky tumour this anastomosis can be difficult. Whilst using the gallbladder for a cholecysto-enterostomy is technically easier, the cystic duct is too narrow (or can insert too low) for this to be a reliable bypass technique.

We describe an alternative method of biliary bypass using the gallbladder in situ, as a conduit between the hepatic duct and the small bowel (hepatico-cholecysto-enterostomy). This involves two simple anastomoses with easy exposure.

Technique A single layer anastomosis of the infundibulum of the gall-bladder to the common hepatic duct is performed, followed by a second anastomosis of the gallbladder fundus to the proximal small bowel.

A rapid-infusion protocol is safe for total dose iron polymaltose: time for change

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Background Intravenous correction of iron deficiency by total dose iron polymaltose is inexpensive and safe, but current protocols entail prolonged administration over >4 h. This results in reduced patient acceptance and hospital resource strain.

Aims To prospectively assess the safety of a rapid intravenous protocol, to compare this with historical controls, and to examine predictors of adverse events (AEs).

Methods Consecutive patients in whom intravenous iron replacement was indicated were invited to have up to 1.5 g iron polymaltose by a 58-min infusion protocol after an initial 15-min test dose without premedication. Infusion-related AEs were graded as mild (no observable patient discomfort), moderate (patient discomfort) or severe (distress or cardiorespiratory compromise). Delayed AEs over the ensuing 5 days were monitored by telephone and graded as mild (no daily activity limitation), moderate (some limitation), or severe (bed rest or medical assistance sought).

Results One hundred patients, 63 female, mean age 54 (range 18–85) years were studied. Mean hemoglobin was 103 (59–158) g/l and ferritin 18 (2–424) μg/l. Most (56%) had gastrointestinal causes of iron deficiency, with menstrual loss in 6%, renal disease in 3% and unknown or under investigation in 35%. Thirty-four infusion-related AEs occurred in a total of 24 patients—25 mild, eight moderate and one severe (myalgia); higher than previously reported albeit retrospectively for a slow protocol iron infusion (Int Med J 2006;36:672). Thirty-one delayed AEs occurred in 26 patients—26 mild, three moderate and two severe (headache), similar in frequency but less in severity to previous prospective data (Int Med J 2009;39:252). Ninety-two per cent of patients completed the rapid infusion, with reversion to standard slow infusion required in three patients experiencing AEs during the test phase and five patients during the rapid phase. All but five patients reported they would prefer iron replacement via the rapid protocol again. The presence of inflammatory bowel disease
Capsule endoscopy in gastrointestinal graft-versus-host disease in post allogeneic haematopoietic stem cell transplantation patients

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Standard endoscopy does not allow complete visualization of the small bowel for the investigation of gastrointestinal graft-versus-host disease (GI-GVHD). Capsule endoscopy (CE) may identify disease extent and severity, which would be otherwise inaccessible to endoscopy.

Aims To assess the role of CE for the diagnosis and assessment of severity of GI-GVHD following allogeneic haematopoietic stem cell transplantation (HSCT) compared with histology as the gold standard.

Methods Forty post allogeneic HSCT patients with suspected GI-GVHD were recruited for CE. All (bar one) patients had endoscopy with biopsies for comparison with CE which were read independently by two capsule endoscopists blinded to the other diagnostic modalities.

Results In the 39 patients who had standard endoscopy with biopsies, 25 had histologically proven GI-GVHD, of which 23 had assessable CE studies (two capsules were retained in the stomach); 18 were positive for GI-GVHD, four were negative, and in one, the diagnosis was discrepant between readers. In the 14 patients without histologically proven GI-GVHD, there were 13 assessable CE studies (one stomach retention); two were positive, 10 were negative and one was discrepant. In six cases, CE observed greater than expected severity in the small bowel as compared to endoscopy and histology results. The sensitivity, specificity, positive and negative predictive value were 81.8% (95% Confidence Interval [CI], 59.0–94.0), 83.3% (95%CI, 50.9–97.1), 90.0% (95%CI, 66.9–98.2) and 71.4% (95%CI, 42.0–90.4), respectively. Agreement between capsule endoscopists on the diagnosis of GI-GVHD was good (kappa score of 0.75; weighted kappa score of 0.84).

Conclusion CE is a safe and non-invasive investigative method for the diagnosis of GI-GVHD in post allogeneic HSCT patients with acceptable sensitivity to inform therapeutic decisions, provided CMV is excluded. Where clinical suspicion is high, a negative study should be supported with endoscopy to confirm absence of GI GVHD. CE can provide striking evidence of disease severity and small bowel extent, otherwise not evident from the limited sampling available through conventional endoscopy.

A survey of hepatitis B screening prior to rituximab therapy for lymphoproliferative disorders

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Introduction Immunosuppression seen with rituximab is associated with a substantial risk of hepatitis B reactivation. Testing for past exposure and current infection with HBV prior to immunosuppression allows prophylactic treatment and monitoring to minimise reactivation. Our aim was to determine the frequency of HBsAg and HBCAb testing in patients receiving rituximab and explore factors associated with testing rates.

Methods All patients who received rituximab at Peter MacCallum Cancer Centre (PMCC) from Jan-Dec 2008 were identified from pharmacy records. Patients exclusively managed at PMCC were included. Demographic, clinical and biochemical data were collected from case
Clinical Practice

Survival outcomes after a colonoscopy ± polypectomy in the elderly

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Background Colorectal cancer (CRC) increases with age, and colonoscopy surveillance decreases CRC-related deaths. Increasing age and/or co-morbidities, however, may nullify this survival benefit. The aim of this study was to determine the predictors of survival following a colonoscopy that excluded CRC and to assess the impact of age and co-morbidities on study outcomes.

Methods Ninety-seven patients (mean age 63 [range 32–88], 61% male) received colonoscopy in 2008. HBsAg testing was performed in 84 (86.6%). Of those tested, seven (8.3%) had both HBsAg and HBeAb testing and five (6.0%) were tested after their first dose of rituximab. One patient tested HBsAg+ve and was treated with standard lamivudine prophylaxis. Two patients were HBsAg-ve and HBeAb+ve and were monitored closely during treatment with LFT’s and HBV DNA levels. All three patients had known hepatitis B exposure. On univariate analysis, treatment with rituximab alone (n = 15 [15.2%], 66.7% tested vs. 90.2% in multiple agents group) (OR 4.63, 95% CI [1.26, 16.94], p = 0.02) predicted a lower rate of testing. Additionally, there was a trend for older patients (OR 1.05, 95% CI [1.00, 1.10], p = 0.07) to not be tested. Being male (p = 0.51), receiving an earlier first dose of rituximab (p = 0.55), seniority of initial evaluating doctor (p = 0.54) and initial review prior to FDA warning (n = 14, 14.1%) (p = 0.35) were not associated with screening rates. On multivariate analysis treatment with rituximab alone remained significant (AOR 4.43, 95% CI [1.01, 19.34], p = 0.048).

Conclusion Greater than 85% of patients who received rituximab therapy at PMCC during 2008 were tested for HBsAg. However HBcAb was rarely tested for in this era. Subsequently laboratory policy at PMCC has been modified to test for both HBsAg and HBeAb automatically. Treatment with rituximab alone predicted lower rates of testing.

Treatment of non-erosive reflux disease with proton pump inhibitor therapy in Chinese patients: a randomized controlled study

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Evidence suggests that rates of gastroesophageal reflux disease are increasing in the Asia-Pacific region, where patients tend to have predominantly non-erosive reflux disease as opposed to erosive (reflux) esophagitis. At present data for responsiveness of non-erosive reflux disease to proton pump inhibition is scant.

Aim To study esomeprazole for the treatment of non-erosive reflux disease in Chinese patients.

Patients with a clinical diagnosis of gastroesophageal reflux, and a locally validated reflux index, the Chinese GerdQ, of equal or greater than 12 were recruited and randomized to receive esomeprazole 20 mg daily or placebo for 8 weeks. Reflux Index scores, quality of life (SF-36) and Hospital Anxiety and Depression (HAD) scale and symptom relief were evaluated before, during, and after treatment.

A total of 175 patients were randomized. Patients in the esomeprazole group (n = 85) demonstrated a statistically significant reduction in their GerdQ index from 19.45 to 15.37, 14.32 (p = 0.013, p = 0.005) at weeks 4 and 8, respectively. Compared to placebo at week 8, 57.1% of patients on esomeprazole found their symptoms resolved or were acceptable compared with 37.2% in the placebo group (p = 0.001). There was no statistically significant difference in overall quality-of-life measures or the HAD scale related to treatment.

This study suggests that esomeprazole is efficacious in treating Chinese patients with non-erosive reflux disease.

Comparison of the M and XL probe in transient elastography using fibroscan

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FibroScan® is a validated non-invasive device for assessing liver stiffness. The standard probe is designated the as the ‘M probe’. Recently an ‘XL probe’ has been developed for use in larger patients although there is no data comparing the use of the M and XL probe or guidelines as to indicate the most appropriate population groups to use the M or XL probe.
Methods  One hundred consecutive patients were assessed with both the M probe and XL probes at identical sites in the right mid-axillary line according to accepted procedure. Patients were categorised into six groups based on their BMI. A successful scan had at least 10 valid readings, a success rate of >60% and IQR/median <30%. Data are reported as median [25–75IQR] KPa. Analysis was also performed using the more stringent IQR/median <21.

Results  One hundred patients (53% male, age 54 years [IQR 48–62], BMI 26 [IQR23.5–30.1]) were examined. BMI was unrecordable in two subjects due to limb amputations. Aetiology was Hepatitis C 38%, Hepatitis B 21%, NAFLD 14%, other 27%. There was no difference in the overall success rate between the M probe (78%) and the XL probe (82%). However, using a combination of either the M or XL probes, successful readings were able to be obtained in 94% of individuals. BMI influenced the success rate for the M probe (p < 0.001) but not the XL probe. In 66 subjects, both the M and the X probe were successful however the results were lower with the XL probe 6.5 [5.1–9.5] and 6.1 [4.9–7.9], p < 0.005. The same pattern was observed using the more stringent IQR/median <0.21.

Conclusions  Our data indicate that the XL probe is ideally suited to use in subjects with a BMI > 30. Having access to the XL probe resulted in a successful FibroScan® examination in an additional 16% of subjects. Readings with the M and XL probe are not identical and repeat examinations should ideally use the same probe as the initial examination to allow interstudy comparison.

Relation of liver stiffness to volume status: non-invasive assessment using fibroscan

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FibroScan® can non-invasively quantitate Liver stiffness (LS) however the effect of volume changes on LS have been under-explored. We explored the influence of volume changes on LS by evaluating the relationship between liver stiffness and disease severity in patients with Chronic heart failure (CHF) and if LS can predict changes in volume status following diuretic treatment of acute decompensated HF (ADHF), and dialysis in ESRF patients.

Methods  We prospectively examined LS in subjects with CHF without known liver disease and compared the results to healthy control subjects. We evaluated the effect of volume changes upon LS in volume overloaded ADHF patients on presentation and following diuretic therapy, and in ESRF patients pre and post dialysis. FibroScan® readings were obtained according to accepted standards. Ten valid readings were obtained in each individual. Results are expressed as median ± IQR.

Results  CHF patients (n = 34) were well matched to control subjects (n = 34) for age (58.5 ± 16.5 vs. 52.0 ± 9.5 years; p = NS). LS was significantly higher in CHF patients than controls (8.8 ± 1.6 vs. 4.2 ± 0.2 kPa; p = 0.007). Patients with NYHA class III-IV symptoms had higher values than those in NYHA I-II (15.4 ± 3.6 vs. 5.0 ± 0.5 kPa; p = 0.015). However, there was no difference between NYHA I-II patients versus controls (5.0 ± 0.5 vs. 4.2 ± 0.2 kPa; p = NS). Levels were particularly high in volume overloaded ADHF patients and decreased after diuresis (41.6 ± 13.9 vs. 24.9 ± 13.2 kPa; p = 0.043). In contrast, levels were only mildly elevated in pre-dialysis pts (n = 18) and did not change post-dialysis (6.5 ± 1.3 vs 6.3 ± 1.2 kPa; P = NS).

Conclusion  LS is increased as a consequence of CHF and in volume overloaded states secondary to ADHF. A component of liver stiffness in that setting appears able to be reversed by diuresis. In contrast, fluid removal did not alter liver stiffness in dialysis pts. LS assessments may need to account for the cardiac status of the subject and may be influenced by diuretic therapy.
Can the management of people who test positive through the NBCSP be improved?
An audit comparing the public and private sectors in South Australia

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Objective
To obtain a snapshot of the quality of existing colonoscopic and colorectal cancer surveillance services within South Australia for National Bowel Cancer Screening Program (NBCSP) participants.

Methods
A retrospective audit of public and private patient case notes in those who tested FIT positive through the NBCSP and who had undergone a colonoscopy, 2006–2009. Collected data were then compared against the NHMRC guidelines for the Prevention, Early Detection and Management of Colorectal Cancer.

Results
In total, 635 case notes were reviewed. Significant differences were identified between the two health care sectors, with the private sector demonstrating shorter colonoscopy waiting times (18 vs 25 days; p = 0.000) and a greater percentage of signed consent (94 vs 87%; p = 0.006), recorded family history (93 vs 73%; p = 0.000) and bowel symptoms (96 vs 85%; p = 0.000). Recommended follow up after colonoscopy, both for a normal and abnormal (adenoma) result varied greatly both within and between sectors, with a number of recommendations not being in accordance with the NHMRC guidelines for the management of epithelial polyps. Whether a patient with a (adenoma) result was entered into a recall system in comparison to 93% in the private sector (p = 0.000).

Summary/Conclusions
Public facilities, in contrast to the private sector, are limited in their capacity to (1) meet the workload requirements of those with a positive test and (2) ensure appropriate follow-up of those found to have neoplastic lesions.

FibroScan® technique—is less more? A FRIEDMAN, S ROBERTS, P ELDOH, D ISER, W KEMP
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Introduction
FibroScan is a validated non-invasive device that uses transient elastography to assess liver stiffness (LSM) and hence the extent of hepatic fibrosis. It is widely accepted that a valid result requires that a minimum of 10 readings are taken with a success rate of at least 60% and ideally an interquartile range (IQR): median ratio of ≤0.30. This protocol was developed by the manufacturer but has not been subjected to independent validation. We hypothesise that fewer measurements are required to obtain an accurate median stiffness result.

Methods
2056 FibroScan examinations were performed at The Alfred hospital between July 2008 and October 2009 and 1715 (83%) were valid according to accepted criteria. Subjects were divided into three groups according to the LSM: normal/minimal fibrosis (2.5–7.65 kPa), moderate fibrosis (7.66–12.99 kPa) and cirrhosis (≥13.0 kPa). The median LSM result after 10 valid readings was deemed to represent the true LSM and using linear regression the R-square statistic was used as a measure of goodness of fit for each successive measurement (2–9). The data in the cirrhotic population was non-normally distributed and was log-transformed.

Results
One thousand and sixty-nine patients underwent FibroScans that were recorded as within normal/minimal fibrosis with an average median stiffness of 5.32 kPa. The R-square statistic after five measurements was 0.90 and increased to 0.97 after nine readings. Three hundred and forty-three patients underwent FibroScans that were recorded as moderate fibrosis with an average median stiffness of 9.70 kPa. The R-square statistic after five measurements was 0.78 and increased to 0.97 after nine readings. Three hundred and three patients underwent FibroScans that were recorded as cirrhotic with an average median stiffness of 31.3 kPa. The R-square statistic after five measurements was 0.93 and increased to 0.94 after nine measurements (log-transformed data).

Conclusions
Our data suggest that amongst the cirrhotic population there is little improvement in accuracy with successive measurements and as few as three to four readings may suffice in this sub-population. However based on our data we agree with the current recommendations for a minimum of 10 valid LSM readings and this may be especially important in those with less severe fibrosis because each additional reading improves the accuracy in this sub-population.
Methods South Australian NBCSP participants who had tested FIT positive and had proceeded to colonoscopy were identified and a retrospective audit of the relevant case notes was undertaken. Data were collected during 2006–2009 from all metropolitan public hospitals in South Australia, as well as representative private and rural hospitals.

Results Of the 900 positive people identified, 712 case notes were available for review. The main outcomes of colonoscopy were as follows: colorectal cancer (n = 24, 3.4%), advanced adenoma (n = 138, 19.4%), other adenoma (n = 147, 20.6%), hyperplastic poly(plys) (n = 73, 10.3%), other pathology (n = 142, 19.9%), normal (n = 164, 23.0%) and unclassified (n = 24, 3.4%). Of the identified cancers, three (12.5%) were Dukes A, seven (29.2%) Dukes B, 12 (50%) Dukes C and 2 (8.3%) Dukes D. The age range of those with cancer was 55–79 years (63.3 ± 6.5 years), with even gender distribution (each n = 12).

Summary/Conclusions This clinical audit data provide an illustration of the variety of outcomes from FIT positive NBCSP cases within the South Australian context. The staging data of colorectal cancer demonstrates that a significant proportion (41.7%) of cancers were identified in the earlier stages (Dukes A or B). It is perhaps surprising that the overall majority of cancers detected were Dukes C or greater, but this reflects the results of the first round of FIT screening from a largely screening-naïve population.

Ulcers due to ibuprofen-codeine and pharmacists’ opinions regarding recent S3/S4 regulatory changes

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To compare the clinical presentation and endoscopic ulcer appearance in patients using Ibuprofen-codeine (Nurofen Plus [NP]) and those with non-codeine containing non-steroidal anti-inflammatory drugs (NSAIDs) over 1 year. A survey of pharmacists regarding recent S3/S4 changes to NP access was also undertaken.

Methods Patients were identified from medical records retrospectively with a diagnosis of gastric or duodenal ulcers (GDU) on discharge for the period of March 2009 to April 2010. Abuse of NP is defined as oral ingestion of >8 tablets per day for >5 days. Pharmacists in the Macarthur area were identified through a local directory, contacted and asked questions regarding recent NP regulatory changes. Statistical analyses of non-parametric values were performed with the Mann Whitney U test.

Results Over a 1-year period, there were 61 inpatients with NSAID related GDU, 8 (13%) were identified to be abusing NP. Clinical characteristics of those abusing NP (mean 31 tablets/day) were significantly younger (35 y.o. vs 72.5 P = 0.001), had a lower haemoglobin (Hb) on presentation (66 g/L vs 96.5 P = 0.003), and had bigger ulcers (3 cm vs 1 P < 0.001). Thirty-eight per cent of patients abusing NP had significant stigmata for rebleeding on endoscopy compared with 24.6% of controls; one patient abusing NP required endoscopic intervention and subsequent stigmata for rebleeding on endoscopy compared with 24.6% of controls; and unclassified (n = 24, 3.4%). Of the identified cancers, three (12.5%) were Dukes A, seven (29.2%) Dukes B, 12 (50%) Dukes C and 2 (8.3%) Dukes D. The age range of those with cancer was 55–79 years (63.3 ± 6.5 years), with even gender distribution (each n = 12).

Conclusion Hospital in-patients with GDU and NP abuse were younger with lower Hb and larger ulcers. This is reflective on the large quantity of ibuprofen taken secondary to codeine abuse. At least 67% of local pharmacists thought the recent S3/S4 changes might prove insufficient to prevent NP abuse. Tight access to NP is necessary to minimise risk of codeine abuse and related NP complicated GUDs.

Non alcoholic fatty liver disease (NAFLD) in an Australian type 2 diabetes mellitus (T2DM) population

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T2DM is an established risk factor for the development of NAFLD with affected patients at risk of developing Non Alcoholic Steatohepatitis (NASH) and liver cirrhosis. However, data are limited on the prevalence of NAFLD in T2DM in Australia. Thus our aims were to determine the prevalence of NAFLD in T2DM in an unselected Australian population and to study the relevant associations.

Method Consecutive T2DM subjects between 18 and 80 years of age with no known or other risk factors for liver disease were recruited from The Alfred Diabetes clinic. All subjects underwent hepatic ultrasound, laboratory tests and liver FibroScan. NAFLD was defined as the ultrasonographic presence of hepatic steatosis.

Results Seventy-three subjects were included with 57/73 (78%) T2DM subjects having NAFLD (Group A) and 16 (22%) no NAFLD (Group B). The two groups were well matched for diabetes duration, gender and alcohol intake although Group A were younger (63 ± 70 years p = 0.002). Group A subjects were also more likely to have higher BMI (34 vs 29 P = 0.002), waist circumference (114 vs 101 cm; p < 0.001), GGT level (42 vs 23 U/l; p < 0.0001), ALT level (32 vs 23 U/l; p = 0.05) and Liver Stiffness Measurement (9.2 vs 4.5 KPa; p < 0.0001). Thirteen patients went on to have liver biopsy with 14/14 (100%) having NASH and 10/14 (71%) having significant (Brunt 2–4) liver fibrosis.

Conclusion A significant percentage of a T2DM population in Australia have evidence of NAFLD and NASH and are at high risk of developing significant liver fibrosis and cirrhosis. Our data suggest that T2DM patients should be routinely screened for NAFLD in order to identify those at risk for progressive liver disease.

Outcomes of radiofrequency ablation for the treatment of early stage hepatocellular carcinoma

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Background Radiofrequency ablation (RFA) is an established primary modality for treatment of small hepatocellular carcinoma (HCC) offering 5-year survival rates of 20–60%. However, current evidence is inconclusive and Australian data are limited, thus we evaluated survival outcomes and prognostic markers in HCC patients who received RFA as first line therapy.

Methods A retrospective analysis was conducted on HCC cases that received RFA as first line therapy between 1999 and 2009. Patient demographics, severity of liver disease, tumour characteristics and patient outcomes were retrieved from medical histories and death registries.

Results A total of 31 patients (84% male, mean age 65 ± 16 years) received 51 RFA procedures for early stage HCC. Diagnosis was made histologically in 45% and on the basis of imaging ± eGFR in 55%. Complete ablation was achieved in 27 patients (87%) with no major complications.
Median MELD score was 8 (range 6–24) and 24 (77%) had Child-Pugh A status. Hepatitis C (40%) and alcohol (27%) were the most common aetiologies. Median tumour number was 1 (range 1–2) and mean tumour size was 28 mm (range 13–49). Median CLIP score was 1 (range 0–2) with 69% having Okuda stage 1 and 31% Okuda stage 2 disease. Survival outcomes are shown below:

| Year | Overall survival | Recurrence free survival | Tumour free survival |
|------|-----------------|--------------------------|---------------------|
| 1    | 95%             | 61%                      | 71%                 |
| 3    | 58%             | 22%                      | 36%                 |
| 4    | 41%             | 8%                       | 28%                 |
| 5    | 41%             | –                        | –                   |

Factors associated with overall survival included nodule number (HR 3.87, CI 1.21–12.39; p < 0.02), α-fetoprotein levels (HR 4.183, CI 1.19–14.63; p < 0.022) and white blood cell count (HR 1.54, CI 1.08–2.21; p < 0.016).

**Conclusions** These data indicate that RFA is a safe and effective treatment for early stage HCC achieving favourable short to medium term patient survival. While adverse prognostic factors include nodule number, WBC and αFP level, further studies in a larger cohort are needed to identify other potential prognostic factors for tumour recurrence and overall survival.

**Multisystem disease presenting as dysphagia: a regional hospital experience**

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Gastro-oesophageal reflux disease (GORD) and its complications (webs, strictures) are frequently implicated as the cause of dysphagia in this regional gastrointestinal unit. We report a series of patients presenting with dysphagia which was difficult to treat despite conventional therapy (acid suppression, serial endoscopic dilatations) who were found to have unusual oesophageal disease. Symptomatic relief of dysphagia was only achieved when the underlying pathogenesis is recognised and treated.

**Methods** The aetiologies of dysphagia in patients who presented to Ballarat Base hospital from 2008 to 2010 were reviewed. A series of patients who presented with mainly oesophageal symptoms were found to have rare oesophageal and multisystem disease.

Their presentation, investigations (radiological, endoscopic & histological), subsequent managements and the efficacy of treatment were reviewed.

**Results** Symptomatic relief from dysphagia as part of a multisystem disease would more likely be sustained when the underlying pathology is also treated, as conventional local therapy alone may not be effective.

**Summary/Conclusions** GORD is one of the common causes of dysphagia, however rare causes of dysphagia, especially as part of a multisystem disease (ie. Pemphigus, Lichen planus) should be considered as differential diagnosis when conventional treatment is proven unsuccessful.

**Clinical expression of HFE-associated haemochromatosis in subjects under 40 years of age**

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**Introduction** Iron overload in HFE-associated haemochromatosis (HH) is well described in C282Y homozygous persons over the age of 40 years, but data are limited in younger people with HH. This study investigated disease expression in C282Y homozygous HH subjects under the age of 40 years.

**Methods** A retrospective analysis of 272 subjects selected from the HH database at the Queensland Institute of Medical Research was performed. Parameters analysed included age, serum ferritin (SF) (μg/L), transferrin saturation (TS) (%), liver function tests (LFTs), hepatic iron concentration (HIC) (μmol/g), alcohol consumption (g/day), body mass index (BMI), body weight, stage of hepatic fibrosis and the presence or absence of cirrhosis. Subjects were divided into three groups based on levels of SF—low (males <300 μg/L; females <200 μg/L), moderate (<1000 μg/L but >200/300 μg/L) and high (≥1000 μg/L).

**Results** Of the 272 subjects, 79% had SF levels above the normal range and 26% had SFs at a level strongly associated with hepatic damage (≥1000 μg/L). There were significant positive relationships between the level of SF and increasing age, TS, HIC, abnormal LFTs, alcohol consumption, body weight, BMI, hepatic fibrosis stage and cirrhosis (P = 0.008 for weight; P = 0.05 for BMI; P < 0.0001 for all other relationships). Male subjects were also more likely to have elevated SF (P < 0.0001), as were probands (P < 0.0001). Those with high SF were more likely to present with HH-related symptoms, such as lethargy and arthralgia, and iron overload-related disease (SF ≥1000 μg/L and abnormal LFTs) was found in 21% of subjects. Fibrosis was present in 59/161 (36.6%) of those assessed, including stage 3–4 fibrosis in 11.8%. The presence of one or more cofactors (diabetes, excess alcohol, steatosis) was significantly associated (P = 0.007) with stage 3–4 fibrosis.

**Conclusions** In this study biochemical expression of iron overload was common in individuals aged <40 years and 36.6% of those assessed had liver fibrosis. Preventive measures for young C282Y homozygotes should include limiting alcohol consumption and maintaining an ideal body weight.

**Relationship between non-alcoholic fatty liver disease, vascular risk factors and arterial stiffness in adolescents**

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The prevalence of Non-Alcoholic Fatty Liver Disease (NAFLD) in children and adolescents is increasing. NAFLD is associated with an increased risk of cardiovascular disease in adults, however it is currently not known whether NAFLD in adolescence is associated with an increased risk of future cardiovascular disease. Our aim was to assess the association between cardiovascular risk factors, including arterial stiffness, and NAFLD in adolescents.
Methods

1170 adolescents of the Western Australian pregnancy cohort (RAINE health study) underwent assessment including hepatic ultrasound, anthropometry and biochemistry at age 17. Adolescents with sonographic evidence (according to validated criteria) of fatty liver and self reported weekly alcohol intake of less than 140 grams for males and 70 grams for females were classified as having NAFLD. Cardiovascular risk was assessed by measuring the arterial stiffness with Augmentation index (Alx) and pulse wave velocity (PWV) using SphygmoCor®, blood pressure and resting heart rate. Fasting serum lipid profile, insulin, glucose, leptin, adiponectin, hs-CRP and alanine aminotransaminase (ALT) were measured.

Results

The prevalence of NAFLD was 12.8% (10.1% male, 15.6% female, p = 0.004). Males with NAFLD had higher mean ALT and AST levels than males without NAFLD (p < 0.01), however there were no differences in aminotransaminase levels in females with or without NAFLD (p > 0.2). Subjects with NAFLD were more likely to have conventional cardiovascular risk factors with higher systolic and diastolic blood pressure, body mass index, insulin resistance as measured by HOMA-IR, hs-CRP and lower HDL cholesterol (p < 0.05). LDL cholesterol tended to be higher in subjects with NAFLD (p = 0.08). Males with NAFLD had a higher AIx than those without NAFLD (101.7 ± 10.9% vs 97.7 ± 11.9%, p = 0.005) which remained significant after adjustment for heart rate (p < 0.001), but not when adjusted for conventional vascular risk factors (p > 0.5). Similarly, ALT levels were correlated with AIx (r = 0.103, p = 0.02) in males, however this became non-significant after adjustment for vascular risk factors. Among males, there was a trend towards NAFLD being a risk factor for higher PWV after adjustment for conventional risk factors (β = 0.19, p = 0.1). There was no difference in AIx or PWV in females with or without NAFLD, nor was ALT correlated with AIx or PWV (p > 0.2 for all).

Conclusion

Vascular risk factors are common in adolescents with NAFLD. Signs of liver injury and arterial stiffness are already evident in adolescent males with NAFLD. Treatment of NAFLD in adolescents should include management of cardiovascular risk factors.

The efficacy of utilising guidelines and tutorials in improving knowledge and confidence in junior medical staff of diagnostic abdominal paracentesis

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An audit of abdominal diagnostic paracentesis showed that it was being performed sub-optimally across Eastern health (EH). We hypothesised that this at least partly involved deficiencies in knowledge and training. The aim of the study is to define knowledge and practice, to design an educational program and training, to deliver that program and then to assess its efficacy.

Methods

A questionnaire was designed to assess knowledge and practice of diagnostic paracentesis and sent to all Junior Medical Staff (JMS). Guidelines for optimal practice were developed by systematic literature review and consensus, upon which a tutorial was developed and delivered over the next calendar year as part of the EH JMS teaching programs, and placed on the EH intranet. The same questionnaire was distributed to a similar cohort at the end of the year.

Results

Thirty-nine per cent (87/215) responded to the first survey. Low confidence and poor knowledge were evident in terms of consenting, technique, sterility, risks, equipments and ideal tests. Of the 22% (67/300) who responded to the post intervention questionnaire, 52% attended tutorials and/or used intranet guidelines. The knowledge especially in most deficient areas significantly improved; reduction in unnecessary coagulopathy correction (88% vs. 20% p < 0.001) and use of local anaesthetic (85% pre vs. 20% post p < 0.001), safe insertion site choice (18% pre vs. 79% post p < 0.001), ordering correct tests (59% pre vs. 82% post p = 0.03) and reduction in over-sterility (94% pre vs. 62% post p < 0.02). However, improvements were only observed in those who undertook education. Confidence in performing the procedure was not significantly improved by the educational program (0% pre vs. 38% post intervention p = 0.08) in the group who never did paracentesis.

Conclusions

Involvement in an active education program improves knowledge and skills in performing diagnostic paracentesis. Confidence in doing the procedure is more associated with experience than knowledge. Educational programs for diagnostic paracentesis require components of both educational and practical experience.

Epidemiology of paracetamol overdose in Victoria over 7 years

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Paracetamol is one of the most readily available and widely used analgesics, but can cause serious morbidity and/or mortality when taken in overdose. The epidemiology, outcome and inpatient health care burden of paracetamol poisoning in Victoria however, has never been clearly examined.

Data were extracted from the Victorian Admitted Episodes dataset for all admissions to Victorian hospitals for cases of acetaminophen overdose (ICD-10-AM: T39.1, Y45.5) between 1 July 2000 and 30 June 2007. Basic patient demographic data were collected. Patients who died at time of overdose or a later date were identified via database linkage. Victorian population demographics were from the Australian Bureau of Statistics.

During the examined period, there were a total of 1462 hospital admissions with paracetamol overdose, a mean of 2095 per year. The incidence of hospital admissions decreased slightly from 46 cases per 100000 in 2001 to 39 cases per 100000 in 2006 (P < 0.001). Of the overdoses, 62.5% were intentional and 71% occurred in women. The majority of admissions were in younger individuals who also had an improved prognosis (Table 1). Death during the 30 days following admission was 1.1%, but deaths directly attributable to paracetamol were rare, with 12 deaths in 2000–2003 and 14 from 2004 to 2007 (p = 0.5).

Table 1

| Age    | Overdoses | 30-day mortality | Paracetamol related death |
|--------|-----------|------------------|---------------------------|
| 0–19   | 3781 (25.8%) | 3 (<0.1%)           | 1 (<0.1%)                |
| 20–39 | 6295 (42.9%) | 11 (0.2%)            | 4 (<0.1%)                |
| 40–59 | 3380 (23.1%) | 37 (1.1%)             | 12 (0.4%)                |
| 60–79 | 814 (5.6%) | 51 (6.3%)             | 7 (0.9%)                 |
| 80+   | 392 (2.7%) | 52 (13.3%)            | 2 (0.5%)                 |
| Total | 14662 (100%) | 154 (1.1%)            | 26 (0.2%)                |

Paracetamol overdose accounts for an enormous burden on health care in Victorian Hospitals. Although the number of admissions is high, there has been a gradual reduction during the study period and fortunately few deaths directly related to paracetamol.
Low incidence of IgG4-related sclerosing disease in patients undergoing planned pancreatic resections for presumed neoplasia at a tertiary level teaching hospital

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IgG4-related systemic sclerosing disease is a rare clinical syndrome which is multisystem in nature. The pancreas, biliary tract, liver, kidneys and lungs are commonly affected organs. Autoimmune pancreatitis is becoming more widely recognised and is a focal form of the systemic syndrome. Patients with AIP often have a similar presentation to that of pancreatic cancer. The aim of this study was to assess the incidence of IgG4-related sclerosing disease in patients undergoing pancreatic resections for presumed pancreaticobiliary malignancy.

Methods A retrospective chart analysis was performed of all patients undergoing pancreaticoduodenectomy or partial pancreatic resection at Concord Repatriation General Hospital between 1999 and 2009. Histology for all resections or pre-operative biopsies were reviewed. Any cases of non-diagnostic or benign histology were retrieved and staining for IgG4 was performed.

Results A total of 99 cases of pancreatic resections were identified over the 10-year period. Pancreatic, ampullary, bile duct, gall bladder, duodenal, gall bladder and oesophageal malignancies made up for 72 cases. Neuroendocrine tumors, pancreatic cystic neoplasms, duodenal tubulovillous adenomas and pseudocyst comprised of 25 cases. Two cases were found to have benign histology. One was a 67-year-old female who presented with jaundice and pancreatic mass. IgG4 serology was not performed prior to surgery. The resected specimen stained positively for IgG4. The patient was subsequently treated for Autoimmune Pancreatitis with steroids and is now in remission. The second was a 70-year-old male who presented with biliary dilatation. Pre-operative bile duct histology was inconclusive. Histopathology of the resected specimen was consistent with atypical inflammatory cells. The patient has not suffered consequent morbidity related to surgery, 11 years post resection. This audit shows that the incidence of resection for IgG4 related disease at our institution is 1–2% which is lower than figures quoted in other studies.

Conclusion There is a low incidence of inadvertent pancreatic resections for IgG4 related disease at our institution. Nevertheless, a high index of suspicion for IgG4 related disease is needed in patients with inconclusive histopathologic work-up prior to pancreatic resection.

Knowledge of appropriate indications for upper GI endoscopic ultrasound amongst clinicians

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Knowledge of appropriate indications for endoscopic ultrasound (EUS) amongst physicians in Australia is unknown. Studies in USA have shown that Gastroenterologists are able to identify appropriate indications for EUS with respect to the oesophageal, gastroduodenal and hepatopancreaticobiliary systems, adapted from a previously validated questionnaire from the Mayo Clinic (GIE 2006, 63(1):107–111). Survey forms were completed on the spot and returned within 30 min of distribution. Results were compared between the four groups using the Kruskall–Wallis test for non-parametric data.

Results Twenty-two CGs, nineteen GATs, twelve IMPs and sixteen JMOs participated in the survey. The median scores per group were: CGs 17/19 (IQR 15–18), GATs 17/19 (IQR 15.5–18), IMPs 14/19 (IQR 12.75–17), JMOs 13/19 (IQR 11.25–15). In the IMP and JMO group, lack of knowledge was greatest for accepted indications for staging of lung cancer and evaluation of suspected choledocolithiasis. There was a significant difference between CGs and IMPs (p = 0.0055) for staging of lung cancer and choledocolithiasis (p = 0.0018). There was also a significant difference between CGs and JMOs for lung cancer staging (p < 0.0001) and choledocolithiasis (p = 0.0005). There was no significant difference for lung cancer staging and choledocolithiasis between CGs and GATs (p = 0.8458 and p = 0.8610 respectively).

Conclusion Knowledge of appropriate indications for EUS is predictably highest amongst CGs and GATs. Significant pathologies which would benefit from EUS evaluation may not be appropriately referred due to a lack of knowledge amongst non-gastroenterology specialties. Educational programs which delineate the role of EUS, targeted at non-gastroenterology specialties may improve appropriate EUS referral patterns in teaching hospitals.

Type 2 diabetes with non-alcoholic fatty liver disease: a significant predictor of non-alcoholic steatohepatitis and advanced fibrosis

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Background and Aim Hepatic steatosis, commonly associated with obesity and type 2 diabetes, is an increasing health problem in the community. Non-alcoholic fatty disease (NAFLD) encompasses hepatic steatosis and a more severe form of chronic liver disease namely non-alcoholic steatohepatitis (NASH). NASH can lead to liver fibrosis, cirrhosis, liver failure and eventually death. NAS score (for the diagnosis of NASH) derives from scoring a set of histological markers (Kleiner et al). Our aim is to identify significant predictors of NAS score ≥5 and advanced fibrosis (F3/F4) in a group of patients who have NAFLD.

Methods The Western Australia Liver Tissue and Serum Bank is a resource database where patients who undergo liver biopsy as part of their clinical evaluation volunteered their consents to provide for storage of their sera, DNA and any spare liver biopsy tissue samples. Database includes morbidly obese patients who underwent laparoscopic gastric reduction as management of their weight and non-morbidly obese patients who underwent liver biopsy as on-going evaluation of their NAFLD.

Results Fifty-three patients with a liver biopsy were identified. Mean aged 51.4 ± 13.1 years, 22 (42%) patients had type 2 diabetes and 17 (32%) were bariatric patients. Thirteen (25%) patients had NAS score ≥5 and 16 (30%) patients had advanced fibrosis. We found type 2 diabetes (p = 0.026), ALT (p = 0.001), HDL (p = 0.006) were significantly associated with NAS ≥5. Gender, hypertension, bariatric surgery and other metabolic variables including triglycerides and fasting glucose did not predict NAS score ≥5. Type 2 diabetes (p = 0.001), age (p = 0.001), bariatric surgery (p = 0.058), Hepscore (p = 0.001), platelet counts (p = 0.018) and fasting glucose (p = 0.015) were significantly associated with advanced fibrosis.
Gender, hypertension and other metabolic variables including triglycerides and high density lipoprotein did not predict advanced fibrosis.

**Conclusion** In the setting of non-alcoholic fatty liver disease, type 2 diabetes is a significant predictor of non-alcoholic steatohepatitis and advanced fibrosis.

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**Referrals to an intestinal transplantation centre in Australia—the early experience**

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**Introduction** Intestinal transplantation (ITx) is a potential rescue therapy for patients with intestinal failure (IF), reserved for those who have both failed intensive attempts at cessation of home parenteral nutrition (HPN), and have suffered life-threatening complications of this therapy.

**Methods** Patients with IF requiring HPN referred over the past 3 years to our service specifically for an ITx assessment were reviewed, with demographic and intestinal characteristics, indication for transplantation and outcome measures analysed.

**Results** Seventeen patients referred from five Australian states—12 adult (eight female, mean age 46 years, range 26–68 years) and five children (three female, mean age 8.6 years, range 4–11 years)—were identified. In adults: the cause of IF was short bowel syndrome (SBS) in 10 (ischaemia eight, congenital atresia one, ischaemia and Crohn’s one) and functional in two (pseudo-obstruction one, sclerosing peritonitis one). In patients with SBS, mean jejunoileal length was 95 cm, with a colonic remnant in six (full in one, partial in five). Seven patients had an end enterostomy, two had a jejunocolic anastomosis, and three had a jejunooileocolic anastomosis. Median TPN duration was 12 months (range 2 months–20 years). HPN-related complications had occurred in seven (multiple central vein thrombosis in four, line sepsis in seven, liver failure in two, recurrent dehydration in three). Eleven were accepted for evaluation for ITx, and entered a HPN optimisation program. Complete weaning from HPN was achieved in two (via surgical reconstruction in one), partial weaning in six (including three requiring intermittent intravenous fluids only and two currently weaning), and three assessed as having permanent IF. One patient is activated for combined liver-ITx, whilst the remaining two patients have deferred work-up due to a current satisfactory quality of life (QOL). In children: the cause was gastrochisis in three, Hirschsprung in one and allograft enterectomy following chronic rejection in one. Mean jejunoileal length was 55 cm, with colonic remnant in two (pseudo-obstruction one, sclerosing peritonitis one). In patients with SBS, mean jejunoileal length was 95 cm, with a colonic remnant in six (full in one, partial in five). Seven patients had an end enterostomy, two had a jejunocolic anastomosis, and three had a jejunooileocolic anastomosis. Median TPN duration was 12 months (range 2 months–20 years). HPN-related complications had occurred in seven (multiple central vein thrombosis in four, line sepsis in seven, liver failure in two, recurrent dehydration in three). Eleven were accepted for evaluation for ITx, and entered a HPN optimisation program. Complete weaning from HPN was achieved in two (via surgical reconstruction in one), partial weaning in six (including three requiring intermittent intravenous fluids only and two currently weaning), and three assessed as having permanent IF. One patient is activated for combined liver-ITx, whilst the remaining two patients have deferred work-up due to a current satisfactory quality of life (QOL). In children: the cause was gastrochisis in three, Hirschsprung in one and allograft enterectomy following chronic rejection in one. Mean jejunoileal length was 55 cm, with colonic remnant in two. All have failed intensive attempts at HPN weaning and suffer from HPN complications (thrombosis in four, sepsis in four and liver failure in one). Three children are currently active on the wait-list, including one awaiting a combined liver-ITx.

**Conclusion** Patients with IF requiring HPN referred over the past 3 years to our service specifically for an ITx assessment were reviewed, with demographic and intestinal characteristics, indication for transplantation and outcome measures analysed.

**A prospective evaluation of the cardiac effects of large hiatus hernia: new insights into the mechanism of dyspnoea using cardiac CT**

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**Background** Patients with large hiatus hernia (LHH) are often affected by significant dyspnoea, the cause of which is largely unknown. The close proximity of LHH to the left atrium (LA) and pulmonary veins (PV) raises the possibility of extrinsic cardiac compression.

**Methods** We evaluated 40 patients with LHH (mean age 73 ± 10 years, female 27) using cardiac CT. Visual assessment of LA, PV and coronary sinus compression (CS) and measurement of the LA volume and antero-posterior diameter were undertaken. The left ventricular (LV) stroke volume was also measured to assess cardiac output. Seventeen patients underwent surgical repair of the LHH and were re-evaluated with a repeat CT post-operatively.

**Results** The number of patients in NYHA Class I, II, III and IV were 7, 11, 18 and 4. The mean hiatus hernia volume was 337 ± 222 ml. 29/40 (73%) patients demonstrated CT evidence of LA compression. The right inferior PV was compressed in 15/40 (38%), left inferior PV in 15/40 (38%) and CS in 27/40 (68%) patients. Mean LA volume and diameter were 88 ± 22 ml and 36.8 ± 7.4 mm. There was a significant inverse relationship between hiatus hernia volume and LV stroke volume (Figure). Following surgery, there was significant resolution of LA, PV and CS compression.

**Conclusion** Patients with LHH have significant NYHA functional class impairment and evidence of marked LA and PV compression, which resolve significantly following surgery. These cardiac effects of LHH may represent a novel mechanistic explanation for their symptoms.
Correlation between hiatus hernia volume and stroke volume

$r^2=0.1844$
$p=0.0064$

Conclusions Patients with LHH have significant NYHA functional class impairment. Cardiac compression may represent an important pathophysiologic mechanism by which dyspnoea develops. Furthermore, cardiac compression may have significant effects on stroke volume and thus cardiac output. This study is the first to systematically evaluate these cardiac effects of LHH.

Large hiatus hernia repair: impact on shortness of breath
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Background This study examined the rate of dyspnoea and the effect of repair upon the rate of dyspnoea and quality of life in patients with very large hiatus hernia.

Methods Between 2004 and 2008, 30 consecutive patients with large mixed hiatus hernia and more than 50% of the stomach in the chest underwent operation with a minimum follow up of 2 years. Patients were enrolled prospectively and institutional ethics approval was obtained. Dyspnoea was graded on a scale of 1–4 and all patients underwent laboratory respiratory function testing prior to surgery and 3 months after repair. Preoperative symptom severity and quality of life questionnaire (GIQLI) were completed preoperatively and at 3 months, 6 months and yearly thereafter. Objective review was obtained with endoscopy and/or barium meal.

Results There was mortality and morbidity was 10%. Preoperative dyspnoea occurred in 26 patients and 22 had complete resolution following surgery, and four improved. The mean dyspnoea severity index improved from 2.4 to 1.3 (P < 0.001). Little change was seen in FEV1 (1%), FVC (3%) and DLCO (3%) improvement. No significant changes in respiratory function tests were seen in patients with resolution of dyspnoea. The GIQLI score improved from the preoperative value of 89.7–107.9 postoperatively (P < 0.001).

Conclusion Twenty-six out of 30 patients with giant hiatus hernia had dyspnoea as a presenting symptom. Twenty-two out of 30 underwent complete resolution of dyspnoea following surgery. No significant changes were found in respiratory function tests indicating that pulmonary function did not appear to influence shortness of breath.

Significance of incidental focal colonic uptake on FDG PET-CT and correlation with colonoscopy and histopathology
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Aim To assess the clinical significance of incidental focal colonic uptake on FDG PET-CT and correlate the intensity of uptake with that of colonoscopic findings and histology.

Methods Incidental focal colonic FDG uptake on PET-CT studies for the evaluation of non-colorectal malignancy performed over a 5-year period were retrospectively reviewed. The location and intensity of FDG uptake measured in terms of the maximum standardized uptake value (SUVmax) were determined by a single Nuclear Medicine Physician. The results of the colonoscopy and histology were reviewed and correlated with the abnormal FDG PET-CT uptake. The Mann-Whitney U test was used to assess differences between continuous variables.

Results A total of 106 cases were identified. Of these, 44 (42%) patients had abnormalities correlated with the site of focal uptake on FDG PET-CT, in all but one case. There were eight adenocarcinoma (18%), 12 advanced polyps (villous component, high grade dysplasia, or ≥1 cm) (27%), seven non-advanced polyps (16%) and five colitis (11%). The median SUVmax according to colon pathology was: Normal 4.6 [range 2.7–11.1]; advanced polyps 6.1 [4.1–13.6]; colitis 6.2 [4.5–18]; non-advanced polyps 7.0 [3.7–16.5] and adenocarcinoma 10 [6.3–20.5]. The median SUVmax for adenocarcinoma was significantly greater than normal and advanced polyps (both P = 0.02). Seventy-eight per cent of patients with a normal colonoscopy had SUVmax ≤5, compared with 50% of colitis, 41.7% of advanced polyps and 28.6% of non-advanced polyps. None of the patients with adenocarcinoma had SUVmax ≤5.

Conclusions A considerable proportion of patients with incidental focal colonic uptake on FDG PET-CT had clinically significant abnormalities on colonoscopy. Therefore, consideration should be given to further investigation of such findings in patients who are considered to have favourable long term prognosis and are appropriate for endoscopic and/or surgical management. SUVmax may be a useful adjunct in identifying those at high risk of significant colonic pathology.

Experienced endoscopists interpret capsule endoscopy studies more accurately? A trainee study
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Introduction Capsule endoscopy (CE) is increasingly used to image the small bowel, and has an established role for the investigation of obscure gastrointestinal bleeding (OGB). Despite the widespread use by gastroenterologists and surgeons in Australia, no formal training is required to practice CE. Experience in video endoscopy (VE) is hence the only prerequisite training required for CE. This study aims to compare the reading of CE between gastroenterology registrars of varying VE experience, using an expert on CE as the gold standard. A second endpoint was to compare the reading of CE by novices (registrars) to an expert consultant.

Method Three gastroenterology registrars were asked to read and interpret 10 CE videos. The gold standard was taken as the CE findings of a gastroenterology consultant with experience of reporting more than 500 CE videos. The three gastroenterology registrars had no previous CE experience, but had varying VE experience, between 200–700 gastroscopies and 50–600 colonoscopies. The registrars were requested to read the
studies in a standard order and to record the elapsed time and perceived nature of lesions, as well as key anatomical landmarks (stomach, small bowel, caecum). Registrars were required to formulate a management plan based on the VE findings. Given the limited case numbers, power calculations and other statistical methods were not used in the interpretation of this pilot study.

**Results**

All registrars accurately identified key anatomical landmarks and identified two incomplete studies. A small bowel polypl was missed by all three registrars—"false negative". Of the four ‘abnormal’ studies, three were detected by the registrars. The two more junior registrars recorded ‘false positives’ in two studies. Notably these false positives occurred in the first four reports. The management plans of the registrars differed from the consultant in three cases, with push enteroscopy being recommended in two two cases by the registrars and a repeat CE being recommended by a third (more junior) registrar in another case.

**Conclusion**

This pilot study suggests that prior VE experience may enable more accurate interpretation of VE. However even amongst registrars of varying VE experience, significant differences in CE reports were noted compared to the gold standard (experienced consultant). False positives and resultant management plans were frequent with early CE reads, suggesting a learning curve.

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**A prospective double blind randomised controlled trial of carbon dioxide versus air insufflation during ERCP: is it worth the pain?**

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**Introduction**

Abdominal pain after ERCP is a common occurrence which often poses diagnostic uncertainty. Carbon dioxide (CO2) insufflation during colonoscopy has been shown to reduce post procedural discomfort. We conducted a randomised, double-blind controlled trial to compare the severity of post-ERCP pain in patients receiving CO2 versus air insufflation.

**Methods**

Patients presenting for ERCP were enrolled consecutively, aiming for a sample size of 88 patients (44 patients per treatment arm, 80% power, α = 0.05) based on estimates of treatment effect obtained from trials using air vs. CO2 during colonoscopy. Those with significant pre-procedure pain (pain score >4) were excluded. All patients received Propofol sedation administered by an anaesthetist. The patients were then randomised to receive either air or CO2 insufflation prior to ERCP. The endoscopist and patient were blinded to the gas used. Pre-ERCP and post-ERCP pain during recovery, 1 h post procedure and on discharge were assessed using a Visual Analogue Scale (VAS: 0–10).

**Results**

We report the interim findings of 61 patients (43 women, mean age: 58.4 years, 34 randomized to CO2) who have completed the study thus far. Patient demographics, indication for ERCP, in/outpatient status, procedure duration, capnography readings, sedation dose and use of post-procedural analgesia were similar in the two groups. Pain was more severe pre-procedure in the group receiving air insufflation compared to CO2 (1.51 vs. 0.38, p = 0.02); however on discharge there was no difference between both groups (0.37 vs. 0.38, p = 0.97) respectively. Pain had improved significantly after ERCP in the group receiving air insufflation (1.51 vs. 0.37, p = 0.01), but this was not observed in the CO2 group (0.38 vs. 0.38, p = 0.50). This finding may have been compounded by the higher pre-procedural pain scores in the air arm.

**Conclusion**

Contrary to promising data of using CO2 during colonoscopy, our preliminary results suggests that there is no added benefit of insufflating CO2 during ERCP when compared to air.

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**A 13-nation population survey of upper gastrointestinal symptoms: the impact of socioeconomic status**

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Previous studies suggest geographic variability in the prevalence of upper gastrointestinal (uGI) symptoms. This might be related to socioeconomic factors but has not been studied so far. Thus the aim of this study was to determine the prevalence of uGI symptoms in 13 European countries and to determine associations of sociodemographic status and uGI symptoms.

**Methods**

Overall, 23,000 population based subjects (aged 18–69 years) were enrolled in this survey. Nations included were Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Italy, Netherlands, Poland, Portugal, Spain and Switzerland.

**Results**

The prevalence of uGI symptoms is high in all thirteen countries (37.8%, 95% CI 37.2–38.4), with a broad range from 23.6% in the Netherlands up to 45.3% in Hungary. Females have a higher symptom prevalence (39%, 95%CI 38.4–39.6) vs. males (37%, 95%CI 36.4–37.6). Heartburn (24%, 95%CI 23.4–24.6) and acidic reflux (14%, 95%CI 13.6–14.4) were the predominant symptoms. BMI, smoking or alcohol consumption, the highest achieved level of education, income per month, the number of phones (main lines and cell), and internet use as indirect markers of a high socioeconomic status were variably associated with the prevalence of uGI symptoms. However, after adjusting for total population size and weighting for age, gender and body mass index, smoking and alcohol consumption were no longer significantly associated with either uGI symptoms or dyspepsia. The gross domestic product per capita was negatively correlated with uGI symptoms and dyspepsia. Subjects with a monthly purchase parity adjusted income of €1499/month reported higher rates of uGI symptoms or dyspepsia compared to those with a monthly income >1500€/month. The numbers of phones (main lines in use) as well as internet use were negatively correlated with uGI symptoms, while both mentioned variables and the electricity consumption were negatively correlated with dyspepsia.

**Summary**

There are marked differences in the country specific prevalence of uGI complaints. In all countries, acidic reflux and heartburn are the most prevalent symptoms. A high socioeconomic status is negatively associated with the prevalence of uGI symptoms.

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**Low bone mass and vitamin D deficiency in a liver transplant population**

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Low bone mass is a common finding in patients with cirrhosis and its complications impact significantly on a patient’s quality of life. The aims of this study were to determine (1) the prevalence of osteoporosis and osteopenia in an adult orthotopic liver transplant (OLT) population, (2) the relationship between low bone mass, vitamin D levels and cause of cirrhosis and (3) document the medical management in this group of patients.
Palliative enteral stenting of malignant gastroduodenal outlet obstruction with Wallflex metal stent: a report of the findings of Australia’s largest known prospective database on the topic, and description of technique

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Purpose To present our institutions’ experience with palliative enteral stenting of malignant GOO and to reinforce the safety and reliability of the procedure when performed by upper gastrointestinal surgeons skilled in endoscopy.

Methods All patients who underwent palliative endoscopic stenting for malignant GOO in 2008 and 2009 were prospectively entered into our database. Diagnosis was made clinically in patients with an image or contrast meal proven obstructing upper GI malignancy. All patients presenting with concomitant obstructive jaundice had their biliary systems decompressed prior to stenting. All procedures were performed using similar equipment and techniques (detailed), and the self-expanding partially covered Wallflex (Boston Scientific) metal stent.

Results In total 33 stent procedures were performed. The average age of patients was 69.5 years. The cause of the obstruction was primarily pancreatic malignancy (67%). Fifteen patients had nil oral intake (45%) prior to stenting, 15 patients (45%) were tolerating liquids only, and three patients (19%) soft food. No patient was able to tolerate solids prior to stenting. Enteral stenting was technically successful in 29 cases (89%). Within the first 24 h post operatively, 16 patients were able to tolerate soft food, 10 patients were able to tolerate liquids, one patient was able to tolerate solids, and two patients were not able to tolerate any diet orally. The median hospital stay was 2 days. There were six (21%) early complications (<30 days post operatively): two cases of bleeding; one case of septicaemia; one pulmonary embolus; and two patients developed jaundice post stenting which PTC. Recurrent GOO was observed in three patients (10%) owing to stent obstruction and all cases were amenable to restenting. Of the 26 patients able to be followed up, 15 of the successfully stented patients had died (52%). Twelve of those patients died without stent obstruction causing GOO recurrence. A significant number of patients (N = 11) remained alive 12 months or longer after stent insertion without complication.

Conclusion In palliative patients with a limited life expectancy, malignant GOO may be successfully relieved in most cases with a self expanding metal stent. The procedure is associated with a low morbidity and mortality, little or no pain post operatively, early reintroduction of diet, and early discharge from hospital.

Prevalence and diagnosis of coeliac disease in an age-stratified random sample of Australian adults

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Australian prevalence data for coeliac disease (CD) comes from a single cohort in Western Australia. Initially, endomysial IgA serology indicated prevalence of 1:250, but later repeat testing with transglutaminase IgA serology suggested CD prevalence to be as high as 1:70. Here we use sera and DNA collected from a random electoral roll cohort of adults from Geelong screened with transglutaminase IgA, deamidated gliadin peptide IgG and IgG serology and HLA DQ genotype to establish sero-prevalence, and longitudinal ascertainment rates of CD in Geelong, Victoria.

The Geelong Osteoporosis Study comprises age-stratified random samples of 1546 females (median age 54.0, range 20–94 years, recruited 1994–7) and 1160 males (56.0, range 20–97 years, recruited 2001–6). Sera were screened by ‘all-in-one’ (tTG IgA/DGP IgG/DGP IgA serology) and positive sera were then rescreened by the three separate serology tests. HLA DQ2.5 and DQ8 genotype was determined in 1598 subjects.

178/2706 sera were above the cut-off value for the ‘all-in-one’ assay, and 113 subjects showed an abnormality in at least one specific ELISA. In the 81 with DNA available, 62 subjects with elevated tTG IgA, DGP IgG or DGP IgA possessed HLA DQ alleles making them susceptible to celiac disease. All 21 subjects with elevations in all three ELISAs (tTG IgA, DGP IgG and DGP IgA) possessed HLA DQ2.5. Despite histology not yet being available, adjusting for the enrichment of HLA DQ2.5 and DQ8 in the sero-positive individuals suggests that 1:54 of this GOS adult cohort is likely to have untreated coeliac disease. When sera were collected in 1995, one (2%) had diagnosed CD (seronegative) and by 2009, seven (14%) were diagnosed. Overall, 41% of subjects possessed HLA DQ2.5 or DQ8; 1:14 with HLA DQ2.5 and 1:50 HLA DQ8 were likely to have CD. Five (10%) individuals predicted to have CD were not detected by tTG IgA serology. Digestive symptoms or autoimmunity were twice as likely in sero-positive subjects (48%).

Conclusions The GOS cohort suggests CD is likely to affect 400 000 Australians, but only 55 000 are diagnosed; half have clinical features that may improve with gluten exclusion. New generation deamidated gliadin peptide serology increases sero-diagnosis of CD by about 10%.
Colonic casts—a literature review
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Colonic casts are a rare phenomenon presumably associated with a mild to moderate degree of colon ischaemia. We present a patient who had the spontaneous passage of a colonic cast. A subsequent review of the literature has been performed.

A Medline search was carried out followed by a cross-checking of references. There have been nine cases reported previously in the literature. We report the tenth case. A review was performed of each case, including the patients' presenting complaint, comorbidities, histopathology and subsequent operative intervention. Evaluation of the cases reveals that a large proportion of the patients who expel colonic casts have a history of an abdominal aortic aneurysm (4 out of 11). Of the 11 patients evaluated, eight had pathology involving the inferior mesenteric artery. Ninety-one per cent of the patients eventually needed an operation.

We believe that patients who pass large bowel casts, have colonic ischaemia as a result of IMA ligation or disease. These patients presumably have a borderline blood supply to their distal colon, and pathology involving the IMA results in ischaemia to the mucosa and submucosa. This results in a consequent shedding of these layers, and hence the formation of the large bowel casts. When they do occur, one must bear in mind that most of these patients will an operation at some stage. Clinicians should remember that even though the patient may not require an immediate operation, the majority, will eventually need a bowel resection for strictureing.

Transient elastography (TE) and correlation with P3NP in patients on methotrexate therapy: a retrospective study at Waikato hospital
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Background and Aim TE is a non-invasive tool for staging liver fibrosis. The optimal cut-off value for the diagnosis of significant fibrosis is 7.65 kPa (META VIR > F0/F1) with a value of 13.01 kPa for cirrhosis (META VIR > F3/F4). Measurement of amino terminal levels of type III procollagen (P3NP) is used to longitudinally follow fibrosis progression on Methotrexate therapy. A role for biopsy is recommended after a 1.5 g cumulative Methotrexate dose and subsequently after every 1.5 g. A median value of P3NP of 5.8 mug/L or higher correlates with histological severity. We aimed to correlate transient elastography scores with P3NP levels in patients on methotrexate therapy.

Method We assessed patients on Methotrexate therapy over a 1-month with demographic data and a documented P3NP value obtained within the previous 3 months. A single operator blinded to the P3NP value performed all FibroScan (TE) assessments. Values were plotted onto a scatter plot diagram and the least squares method used to obtain the line of best fit and a correlation coefficient, r.

Results Sixty-two patients on Methotrexate therapy (31 males, 31 females). The relevant diagnoses were Psoriasis (36), Eczema (17), Inflammatory Bowel Disease (5). Thirty-one (50%) of patients were in the 40–60 age group. Fifty-five patients had a documented P3NP score with TE scores obtained in 58 patients. Four patients were unable to have a TE due to technical limitation of adiposity. Overall 51 patients with TE scores were obtained who also had a documented P3NP score. Correlation of P3NP value with TE in this group demonstrated a poor correlation(r = 0.30). Correlation of the cumulative Methotrexate dose with TE also showed a weak correlation (r = 0.29). BMI was also shown to have a weak correlation with TE (r = 0.29). There was only one patient with a TE score demonstrating a META VIR F4 fibrosis; corresponding P3NP value in this case was 5.5. In total eight of 51 (15.7%) patients had a TE score greater than 7.65 kPa; of these, two patients had a P3NP more than 5.8 mug/L. Five patients had a P3NP value more than 5.8 mug/L or higher. Three of these patients had TE scores, which corresponded to META VIR FO/F1.

Conclusion This study suggests that P3NP is a poor method of staging and assessing liver fibrosis in patients on Methotrexate therapy. This is an exploratory study with further research ongoing in this area.

Improving the quality of colonoscopy: the role of prospective clinical audit
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The quality of colonoscopy is known to vary. Few studies have evaluated methods to improve colonoscopy quality and change physician behaviour. This study aimed to evaluate the impact of prospective clinical audit on the quality of colonoscopy performance.

Methods We conducted a quasi-experimental (pre/post) study in a large, teaching hospital endoscopy unit. Endoscopists were asked to prospectively self-record performance data for all colonoscopies. We measured the quality of colonoscopy before and after audit implementation using established process and outcome indicators. For analysis of adenoma detection rates, we excluded patients with IBD, aged <50, or NBCSP participants, and adjusted for colonoscopist, age, sex and bowel preparation using logistic regression.

Results The pre-audit dataset comprised 1310 colonoscopies (47% male, median age 56 years) and the post-audit dataset comprised 3460 colonoscopies (49% male, median age 58 years). Significant differences in unadjusted rates of terminal ileal intubation and adenoma detection were found pre- and post-audit (see Table). The significant differences in adenoma detection rate persisted after adjusting for colonoscopist, age, sex and quality of bowel preparation (OR 2.18, 95% CI 1.58–3.00, P < 0.001). Significant improvements in the quality of colonoscopy reporting were also evident, specifically in documentation of withdrawal time and bowel preparation.

| Quality indicator                        | Pre-audit | Post-audit | P value |
|-----------------------------------------|-----------|------------|---------|
| Caecal intubation rate                  | 96.1%     | 96.3%      | NS      |
| Terminal ileal intubation rate          | 84.5%     | 89.7%      | <0.001  |
| Adenoma detection rate                  | 27.6%     | 43.1%      | <0.001  |
| Documentation of Indication             | 98.9%     | 99.4%      | NS      |
| Bowel preparation quality               | 59.8%     | 98.6%      | <0.001  |
| Withdrawal time                         | 5.8%      | 92.0%      | <0.001  |

Conclusions The introduction of clinical audit to a large teaching hospital endoscopy unit significantly improved the quality of colonoscopy and colonoscopic reporting. These findings support a role for continuous quality improvement programs in routine colonoscopic practice. Further research should evaluate the long-term impact of clinical audit on colonoscopy quality.
Daytime sleepiness, gastro-oesophageal reflux and Barrett’s oesophagus: a case-control study

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Background Excessive daytime sleepiness (Ex DS) is the major behavioral morbidity associated with obstructive sleep apnoea (OSA). The relationship between OSA and gastro-oesophageal reflux (GOR) is controversial with some suggesting a potential causal relationship. In those with GOR, particularly those with more severe GOR, Barrett’s oesophagus (BO) may occur. The association between OSA and BO is unknown.

Aim To conduct a nested case-control study to quantify the association between GOR, BO and Ex DS.

Methods Within a case-control study conducted in Brisbane, Australia, we undertook a structured interview including the Epworth daytime sleepiness scale (ESS), a validated screening instrument for OSA, as well as clinical and anthropometric measures. We recruited 232 cases with histologically confirmed BO diagnosed 2003-6 and 196 controls from the electoral roll, frequency matched by age and sex to cases. An ESS score >9 defined excessive daytime sleepiness (Ex DS). Odds ratios (OR) and 95% confidence intervals (CI) were estimated using multivariable logistic regression analysis.

Results The prevalence of Ex DS was 15.6% in those with no current GOR symptoms and 24.5% in those with current GOR symptoms (p = 0.02). There was a significantly increased risk of ExDS among those with current GOR symptoms (OR 1.76 95%CI 1.10–2.82). There was no increased risk of Ex DS in those with BO (OR 1.38 95%CI 0.86–2.21). The risk for GOR and BO was unaffected in a logistic regression model adjusting for age, sex, BMI, waist-hip ratio and use of aspirin, NSAIDs, alcohol and cigarettes.

Conclusions The risk of Ex DS is significantly increased in those with GOR symptoms. This finding may have important clinical implications in the management of patients with GOR. The risk of Ex DS was not increased in those with BO.

Atopic irritable bowel syndrome

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Introduction Mast cells have a role central role in atopy and may play a role in some patients with irritable bowel syndrome (IBS), being found in increased numbers in colonic and ileal biopsy specimens.

A previous survey based study by Tobin et al showed that atopic individuals reported increased rates of IBS. We extended this survey to multiple patient groups to further delineate this potential association.

Method Structured questionnaires were administered to 146 consecutive patients attending allergy/immunology (38), gastroenterology (46) and hepatitis (62) clinics at The Western Hospital between September 2009 and February 2010. Questions were asked to determine if patients had symptoms of IBS (according to Rome 2 criteria), and to determine if they had atopic manifestations, including those suggesting an oral food allergy syndrome (OFs). Questions were also asked concerning other common somatic complaints such as headaches and back pain, to determine the likelihood of patient groups to report somatic complaints per se. Patients were asked by clerical staff for voluntary participation in the study, and were excluded if they were not proficient in English. Incomplete surveys were discarded. Sophisticated statistical analysis was not performed in this pilot study.

Results Patients attending the allergy/immunology clinic reported the highest incidence of IBS (42%) but were also the most likely to report other somatic complaints such as headache (23%). Not surprisingly, the allergy/immunology clinic patients reported the highest incidence of atopic conditions such as seasonal rhinitis (50%) and asthma (20%). Symptoms consistent with OFS were equally common in the allergy/immunology patients and gastroenterology patients (15%). Patients attending the hepatitis clinic reported the lowest incidence of IBS (10%), and also the lowest incidence of somatic complaints and allergic conditions.

Conclusion Patients attending the allergy/immunology clinic had the highest incidence of IBS as determined by a self reported questionnaire, but also recorded the highest incidence of somatic complaints per se. This line of investigation could be improved in the future by including a ‘normal’ control group, a specific IBS clinic, and by correlating the questionnaire to serological measures (serum specific IgE to antigens) and by including physician based assessments. Given the high incidence of somatic complaints amongst allergy/immunology patients, psychological and personality testing could be utilized to delineate the effect of these factors on the survey results.

‘Well’ patients with positive screening faecal occult blood testing have gastrointestinal symptoms similar to ‘symptomatic’ patients referred for gastroenterological assessment

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Background Screening of average risk people over the age of 50 years is recommended as a means of reducing mortality from colorectal malignancy. However, it is unclear whether gastrointestinal symptoms are present in this group of people who consider themselves well.

Aim To determine whether the gastrointestinal symptom profile of patients presenting with a positive screening Faecal Occult Blood (FOB) test differs from that of patients referred for assessment of gastrointestinal symptoms.

Methods The gastrointestinal symptoms of 50 consecutive ‘well’ patients referred for colonoscopy with a positive screening FOB test were compared to those of 102 consecutive patients referred for ‘symptomatic’ gastrointestinal assessment within a single community-based consultant gastroenterology practice. Each patient’s symptoms were prospectively documented using a standardised proforma. Patients were identified using a computerised database. Chi squared analysis was used to compare proportions and a p value of ≤0.05 considered significant. The outcome of colonoscopy in FOB patients was also reviewed.

Results The FOB group were older (mean age 60 vs 54 years, p 0.005), the proportion of males was similar in both groups (p = 0.07). Only bloating was more commonly present in the ‘symptomatic’ group (p = 0.005). There was no difference in the rates of constipation, diarrhoea, rectal bleeding or mucous, abdominal pain, weight gain, weight loss, heartburn, dysphagia, indigestion, nausea, vomiting, early satiety, haematemesis or melena. The rates of alcohol excess and abstinence as well as smoking were also similar. At colonoscopy, two (4%) of the FOB group, both males, had colorectal cancer whilst a further 15 (30%) were found to have adenomas. In this group females had 77% of symptoms and 70% of polyps occurred in males.

Conclusions There are significant unreported symptoms in patients referred to gastroenterologists with positive FOBT, particularly in females. Most colorectal pathology was found in males. Symptoms in ‘asymptomatic’ positive FOBT referrals were similar to all referrals to the same practice. This study is limited by its retrospective nature and the age difference between the groups.
**Improve diagnostic yield of capsule endoscopy after bowel preparation: a prospective, randomised, controlled study**

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**Background** The diagnostic yield of capsule endoscopy (CE) depends on the quality of bowel visualization and completion of small bowel examination. The exact value of bowel preparation before capsule endoscopy is still unclear.

**Aim** To prospectively determine the effect of bowel preparation on the quality of images, gastrointestinal transit time, and demonstration of caecum.

**Methods** Patients undergoing capsule endoscopy were randomized into three groups (A–C). Group A had no preparation, Group B had 2 L Polyethylene glycol (PEG) and Group C had 2 L PEG and one pinproprep. The quality of capsule images was assessed by blinded examiners (without knowing which preparation patient underwent). The recording was divided into proximal third, middle third and distal third portion. In each portion, 75% visualization of small bowel is defined as ‘good’. The diagnostic yield of capsule was divided into positive findings, findings of uncertainty and no findings.

**Results** In total, 42 patients were recruited to date. Group A had 16 patients (mean age 64.2 [40–89] years), Group B had nine patients (mean age 57.44 [42–64] years) and group C had 17 patients (mean age 61.3 [30–81] years).

At the proximal and mid 1/3 portion of small bowel, ‘Good’ images were documented in 75% (group A) vs 100% (group B) vs 94% (group C) patients and in 56% (group A) vs 75% (group B) vs 68% (group C) patients respectively (P Value NS between any two groups).

At the distal 1/3 portion of small bowel, 15 patients (60%) had ‘Good’ images in group B–C vs four patients (25%) in group A (P 0.02). The median small bowel transit time was slower in group A (269.5 min) vs group B and C (197.8 min and 221.3 min respectively) (P 0.46). The completion rate was higher in group C (94%) vs group A (64%) (P 0.15).

For the diagnostic yield, 37.5% of patients in group C had positive findings vs only 13% in group A (P 0.13).

**Conclusions** Bowel preparation improves visualization of small bowel, particularly at the distal 1/3 portion of small bowel, which may lead to an improvement of diagnostic yield.

**The oesophageal stents continuum—care vs wellness**

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**Objectives** To provide a comprehensive review in the clinical use of oesophageal stenting and establish its continuum.

**Methods** A MEDLINE search of English language publications to December 2009 related to oesophageal stents with the following keywords alone and in combination (oesophagus, treatment, palliation, strictures, perforations, prosthetic devices, stents, endoscopic treatment, device removal). Also relevant manuscripts were inspected to identify applicable reports. A database model was used to retrieve the information published in each report independently and this was correlated individually.

**Results** From the identified studies, n = 2925 patients with 2946 stents. From 2925 stents, 2776 were used to maintain the patency of the lumen in case of strictures (187 benign, 2589 malignant) allowing oral intake to continue; and 45 stents to preserve the integrity of the lumen in case of disruptions preventing extraluminal contamination. The complexity in the indications has made it difficult to evaluate each stent in large randomized trials, as the clinical experience varies among indications, institutions, availability and cost; also there is ongoing refinement in the technology and development of the stents with their use. The rate for complications is 98.5% (2880/2925 patients) for 2946 stents; including 242 stent related deaths (8.27%).

**Conclusion** Oesophageal stents are an applicable option in specific clinical scenarios, however consideration must be made to their cost, complications and further technological developments. The current use of oesophageal stents appears to be based on a continuum of care (delivering over a period of time based on technology and availability) rather than a wellness continuum (responsible delivery based on a process of awareness, education and growth).

**Blood group O is no longer overrepresented in peptic ulcer bleeding, but blood group B may protect from rebleeding, requirement for surgery and mortality**

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**Background** Blood Group (BG) O has previously been demonstrated to be over-represented amongst patients with peptic ulcer-related upper gastrointestinal haemorrhage. However, the clinical setting and cause of peptic ulcers has changed in recent years with a greater proportion of elderly patients and a falling prevalence of *H. pylori* infection and increased role of NSAIDs. We hypothesised that BG associations have also changed.

**Aims** To examine the prevalence of specific BGs in patients with bleeding peptic ulcers and to define associations of BGs with risk of complications, specifically rebleeding, need for surgery and mortality.

**Methods** Medical records of all patients who underwent upper endoscopy for peptic ulcer bleeding presenting to two Melbourne hospitals between March 2007 and September 2009 were analysed. Demographic, clinical, laboratory and endoscopic data were assessed.

**Results** Two hundred and ninety-five patients (61% male, mean age 69 years) were included. BG was O in 144 (49%), A in 108 (36%), B in 32 (11%) and AB in 11 (4%), an almost identical distribution to the population (49%, 38%, 10%, 3%, respectively—www.betterhealth.vic.gov.au). Mean haemoglobin (g/dL) at presentation was similar across blood groups (99 in patients with BG O, 93 in BG A, 93 in BG B, 107 in AB), as was mean number of red cell transfusions, and mean length of stay. High risk stigmata at endoscopy (active bleeding, visible vessel, adherent clot or ulcer ooze) were more commonly noted in patients with BG O (32%) and A (45%) than BG B (22%) and BG AB (18%). Twenty-three patients (8%) rebled; no patients with BG B rebled as compared with BG O (8%), BG A (10%) and BG AB (9%) (p = 0.06). None of 12 (4%) requiring surgery were BG B. Likewise, none of seven patients who died within 30 days of the index bleed were BG B; six in patients with BG O and one in BG A.

**Conclusions** BG O is no longer overrepresented in patients bleeding from peptic ulcers, nor is it associated with emergency surgery or risk of rebleeding. In contrast, BG B tended to be protective of poor outcomes (risk of re-bleeding, surgery, and mortality). Confirmation of such an association may help clinically in risk stratification. Though the mechanisms of this are uncertain, their elucidation may lead to the development of novel therapeutic agents for peptic ulcer bleeding.
Enhancing gastroenterology training in Queensland: a statewide gastroenterology education program

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Background Gastroenterology training in Australia has typically occurred within a traditional apprenticeship framework, supplemented by trainee initiated self-directed learning. We report the introduction of a structured educational program to enhance and complement existing clinical training: the Queensland Gastroenterology Education Program (QGEP). The QGEP aims to prepare GE trainees for independent practice through innovative educational strategies to promote deep learning and reflective thinking.

Methods The QGEP was introduced in February 2009 as a 2-year program of weekly 2 h videoconferenced sessions of trainee-directed learning. The format and content was derived from international curricula and local stakeholder consultation, and approved by a newly constituted statewide Education Committee. We assessed the impact of two educational interventions (case-based learning, CBL and online reflective journals) using a pre/post study design. Trainees (n = 7) participated in CBL using four peer-reviewed cases with specific learning objectives (LOs, n = 27). We measured learning outcomes using Study Process (deep vs surface learning) and Reflective Thinking Questionnaires, and trainee self-evaluation of LOs.

Results Trainees demonstrated a deep approach to learning at baseline. Trends post intervention suggested achievement of deeper learning and higher order critical thinking, and movement away from surface learning approaches. Trainees reported achieving 93% of the LOs post intervention. Qualitative analysis of trainee feedback revealed strong support for the QGEP, including benefits derived from inter-hospital networking and mentorship. Trainee self-reflection revealed themes consistent with professional attributes (communication, leadership, teamwork, ethical conduct, reflective practice).

Conclusions The QGEP has successfully introduced a statewide program of complementary, structured learning for gastroenterology trainees. Educational benefits appear to include improvements in learning processes and outcomes, although further longitudinal evaluation is necessary. The statewide Education Committee is an essential component for governance and professional engagement. Future initiatives include further development of learning objectives, introduction of formative assessment processes, and establishment of career pathways in gastroenterology education.

Mesh repair of giant hiatus hernia is not required

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Background There is contention regarding the ideal method of fixation of GHH. Recurrence rates have been historically high (5–50%). Mesh repair is advocated by many, despite concern of mesh ‘erosion’ into the gastrointestinal tract and potential for severe complications.

Methods We describe the early results of a modification of an ‘older’ surgical fundoplication and the technique employed. A consecutive series of symptomatic patients with GHH greater than 50% of the stomach underwent laparoscopic repair. Follow up was by clinical review and objective assessment by endoscopy or barium meal.

Results There were 45 patients of mean age 59 years (32–91) and 34 females operated from May 2009 until April 2010. The size of the hernia was mean 63%. There was no mortality. There was one conversion to laparotomy (obese, 100% hernia).

Objective review has been obtained at 3–6 months in 28 patients. Two small recurrences have been confirmed. The remainder have not reached time to review, but will have data by the date of the meeting. Two patients have declined further review. No patient required further hernia repair.

Conclusions Early results confirm acceptable results of GHH repair without mesh. As most hernias reoccur early this technique may have promise.

Prevalence of Helicobacter pylori infection in healthy volunteers and duodenal ulcer patients in St.-Petersburg, Russia

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Objective Prevalence of Helicobacter pylori infection in Russia is studied insufficiently.

Aim to define prevalence of Helicobacter pylori infection in healthy volunteers and duodenal ulcer patients in St.-Petersburg, Russia.

Materials and Methods It has been surveyed 200 healthy volunteers without any gastroenterological complaints and 152 duodenal ulcer patients living in St.-Petersburg. For verification of infection Helicobacter pylori has been used noninvasive breathing test—the helik-test with urea (Associate of medicine and Analytic, St-Petersburg, Russia), based on a kinetic estimation of concentration of ammonia in air of an oral cavity after reception by the patient of a portion of a carbamide (500 mg).

Results Helicobacter pylori has been revealed at 148 examinees (74%) healthy volunteers and 125 (82.2%) duodenal ulcer patients.

Conclusions Helicobacter pylori is more frequently present in duodenal ulcer patients than in healthy volunteers. High prevalence of Helicobacter pylori in healthy volunteers in St-Petersburg dictates necessity of screening of people for timely administrate of eradication therapy for Helicobacter pylori-positive persons. It helps to prevent clinically significant Helicobacter pylori-associated diseases and to prevent of a stomach cancer.