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Audit of IV iron sucrose (Venofer®) usage in Groote Schuur Hospital's Gastrointestinal Unit

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Introduction. Intravenous (IV) iron sucrose (Venofer®) therapy has merit in the management of iron deficiency anaemia in 2 categories of gastrointestinal (GI) patients: those with inflammatory bowel disease (IBD) and those with obscure or recurrent GI bleeds. We wished to audit the effectiveness of this practice in our GI patients.

Methods and materials. This was a retrospective descriptive study of 67 iron-deficiency anaemia patients seen at the GI clinic who received IV iron therapy as day cases. Over a 6-month period results were obtained of their full blood counts and iron studies (n=49) at baseline and post IV iron (Venofer®). Those that received a blood transfusion were excluded.

Results. Participants were predominantly female (69.4%) and 32.6% had IBD. Mean age was 56.2±19.6 years and mean quantity of IV iron given was 885 mg (±355 mg) (approximately 3 infusions). No adverse effects were documented. Mean baseline haemoglobin (Hb) was 10.0 g/dl, with no differences between the IBD and non-IBD groups. However, post-IV infusion, the mean Hb increased by 1.2 g/dl. Mean baseline iron was lower in IBD patients (5.89 mmol/l) than in non-IBD patients (7.8 mmol/l). Post-infusion mean iron for the entire cohort was higher by 6.3 units (11.5 in IBD and 14.4 in non-IBD patients).

Conclusion. IV iron therapy is safe and shows good response in Hb and iron levels in IBD and non-IBD patients, but has a more pronounced effect on iron levels in the latter. These data provide a benchmark for comparison with other therapies in these categories of our GI patient population.

Key words. Anaemia; iron deficiency anaemia; inflammatory bowel disease (IBD); intravenous iron.

Successful use of endoscopic SEMS to palliate malignant gastric outlet obstruction

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Background. Enteral stenting has evolved over the past decade as an alternative to surgical bypass in the palliation of malignant gastric outlet obstruction. In particular, it offers a less invasive option in the management of patients who are often at significant risk for peri-procedural morbidity and mortality. This single-centre prospective study evaluated the success of enteral stenting for the relief of advanced malignant gastroduodenal obstruction.

Methods. Between January 2006 and April 2012, 127 patients (74 men, 53 women; mean age 60.1 years) with clinical, radiological and endoscopic gastric outlet obstruction as a result of irresectable malignancy due to local extent, regional or distant metastatic disease or patient choice, underwent endoscopic placement of a self-expanding metal stent (SEMS) to relieve symptoms.

Results. The technical success rate of endoscopic SEMS placement was 96%, allowing patients to be discharged at a mean of 4 days (range 1 - 23) post stent placement. Fourteen patients (11%) required placement of a second stent due to either a long distal stricture or early technical failure (n=8), or as a result of delayed re-obstruction from tumour ingrowth (n=6). Complications included bleeding (n=2), perforation (n=1), early blockage from a food bolus (n=1), stent migration (n=1) and re-obstruction from stent shortening/deformation (n=1). One patient died following failed stent placement with tumour perforation.

Conclusion. Endoscopic SEMS placement can be safely used to relieve non-resectable malignant gastroduodenal obstruction, minimising hospital stay and peri-procedural morbidity. Technical factors influence its early success rate while secondary stenting is effective in managing subsequent tumour ingrowth.

Temporary placement of covered SEMS for benign gastroduodenal pathology

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Background. Palliation of malignant gastroduodenal obstruction by self-expanding metal stent (SEMS) placement is the accepted treatment of choice. While indications for SEMS placement have expanded, the application for benign gastroduodenal pathology remains controversial. We evaluated SEMS efficacy in patients with benign gastric outlet obstruction (GOO) and duodenal fistulation.

Methods. We analysed a prospective database documenting patients with temporary placement of retrievable covered SEMS for benign gastroduodenal pathology. Technical and clinical successes, as well as short- and long-term complications were evaluated.

Results. Eleven patients (6 men, 5 women) of median age 56.6 years (range 35 - 76), had endoscopic placement of a covered retrievable duodenal SEMS for GOO due to peptic ulcer disease (n=6), extrinsic compression (n=3), pyloric stricture following repair of a perforated peptic ulcer (n=1) and high-output traumatic duodenal fistula (n=1). Indications included significant patient comorbidity, recent surgery and patient preference. Ten stents (91%) were placed successfully; 1 misplaced stent was replaced within 48 hours. Hemoclips were

applied to prevent migration. Early proximal stent migration in 1 patient required replacement after 4 days. Planned retrieval of stents was at 6 weeks. Late migration occurred in 2 patients. One stent was not removable. Four patients (36%) required surgical intervention for recurrent GOO within 4 - 6 weeks. Seven patients (63%) remain symptom-free at 2 - 18 months after stent removal.

Conclusion. While surgery remains the standard of care for benign GOO, temporary duodenal stenting may avoid surgery or improve nutritional status and comorbidity before surgical intervention in selected patients.

Are current ERCP training requirements adequate to ensure competency in interventional endoscopy?

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Background. Endoscopic retrograde cholangiopancreatography (ERCP) is technically the most difficult endoscopic procedure to master, with higher failure and complication rates than other endoscopic interventions. Recommendations for the number of procedures to be performed before achieving competence range from 35 to 200. Traditionally, an 80% bile duct cannulation rate on completion of ERCP training is the desired aim. In an era where the majority of ERCPs performed are therapeutic, is this still an adequate form of assessment?

Methods. An ERCP database was retrospectively reviewed to identify all procedures performed by trainees. Eight surgical and medical gastroenterology trainees completed their 2-year subspecialty training between 2006 and 2012 at Groote Schuur Hospital. No trainee had prior ERCP experience. Each trainee's initial 120 supervised ERCPs were retrospectively reviewed, with division into sequential chronological groups of 30. Comparisons between assisted and unassisted completed ERCPs within the trainees' subgroups were made. Completing an ERCP entailed both deep biliary cannulation and completion of the required therapeutic intervention of sphincterotomy, stenting or stone extraction unaided.

Results. Six trainees showed a definitive trend towards improvement over the 4 quarters, but only 3 had an ERCP completion rate >75% by the final quarter. The average trainee unaided completion rate after 120 ERCPs was 67%.

Conclusion. Due to the complexity of interventional endoscopy, accreditation in performing ERCPs should include steady progress and successful completion rates, rather than an evaluation of biliary cannulation only. A prospective study is needed to redefine the criteria of competency in interventional ERCPs.

Aetiological discrimination of the causes of biliary obstruction in the presence of gallbladder stones

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Introduction. Malignant bile duct obstruction and choledocholithiasis are the most common aetiologies of biliary obstruction. Trans-abdominal ultrasound can identify gallstones with a high sensitivity but it is highly operator-dependent and does not accurately detect bile duct stones. We assessed the utility of other clinical and biochemical markers in predicting the actual cause of the biliary obstruction in patients with gallbladder stones on trans-abdominal ultrasound.

Methods. We performed a retrospective analysis of prospectively collected endoscopic retrograde cholangiopancreaticogram (ERCP) data. Data on patients undergoing ERCP for suspected choledocholithiasis over a 2-year period were reviewed. Data collected included demographics, presence of comorbidities and laboratory investigations such as liver and renal function and haematology tests.

Results. A total of 162 patients were identified; 40 were excluded because of failed cannulation or a normal cholangiogram. Of the 122 patients studied, 82 had confirmed bile duct stones (group 1) and 40 had alternative diagnoses (group 2). Mean patient age in group 1 was 50.7 years v. 58.2 years in group 2 ($p<0.05$). The female to male ratio was higher in group 1 than in group 2. Higher serum bilirubin and liver enzymes and lower albumin levels also significantly predicted the finding of alternative diagnoses in these patients.

Conclusion. Male gender, higher serum bilirubin and liver enzymes, and lower albumin levels are predictors of an alternative diagnosis to choledocholithiasis in patients with gallbladder stones. Accurate identification of the one-third of patients with no ductal stones would allow appropriate further imaging prior to an appraisal of ERCP need.

SEMS insertion: Fluoroscopy v. pure endoscopy – a cost comparison

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Background. Self-expanding metal stenting (SEMS) is used for palliation of dysphagia in oesophageal cancer. In most centres it is performed under fluoroscopic guidance. Limited access to fluoroscopy at our institution led us to develop a pure endoscopic technique. We undertook a cost comparison of both approaches.

Patients and methods. We performed a prospective analysis of patients stented at Greys Hospital utilising endoscopy alone compared with patients stented at IALCH in Durban where fluoroscopy is routinely used. We observed and documented 20 procedures at each centre. Average costing was estimated using protocols from the Revenue department and private practitioners. Individual cost drivers include use of the fluoroscopy suite, use of contrast, screening time and overall procedure time.

Results. The average additional cost of utilising fluoroscopic guidance for SEMS insertion is approximately R2 065.00 per patient. The average total procedure time of the pure endoscopic technique was 5 min (range 4 - 11 min) v. 17.5 min (range 5 - 24 min) for routine fluoroscopy. The use of screening also exposed the operator to an estimated 1.05 mGy of radiation per procedure.

Conclusion. In a resource-limited setting with a high burden of inoperable oesophageal cancer, time and cost are 2 significant variables. This simple analysis confirms that the pure endoscopic technique of SEMS insertion is more cost-effective and time-efficient than routine fluoroscopy.

Outcome in decompensated alcoholic cirrhosis patients with acute variceal bleeding

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Objectives. Variceal bleeding (VB) is the leading cause of death in cirrhotic patients with portal hypertension and oesophageal varices. This prospective single-centre study evaluated the efficacy of emergency endoscopic intervention in the control of acute VB and the prevention of rebleeding and death during the index hospital

admission in a large cohort of consecutively treated alcoholic cirrhotic patients after the first variceal bleed.

Methods. From January 1984 to August 2011, 448 alcoholic cirrhotic patients (349 men, 99 women; median age 50 years) with VB underwent 805 endoscopic treatments (556 emergency, 249 elective) during their index hospital admission. Injection sclerotherapy was used to control bleeding until 1990 and subsequently variceal banding was used. Child-Pugh (C-P) class and score, endoscopic control of initial bleeding, variceal rebleeding and survival after the first hospital admission were recorded.

Results. Endoscopic intervention alone controlled VB in 394 patients (87.9%), while 54 patients also required balloon tamponade. Fifteen patients rebled within 24 hours and 61 rebled after 24 hours (*N*=76; 17%). Ninety-three patients (20.8%) died in hospital. No C-P class A patients died, while 16 (8.9%) C-P class B and 77 (35.8%) C-P class C patients died. Mortality increased exponentially as the C-P score increased, reaching 80% with a C-P score >13.

Conclusion. Despite initial endoscopic control of variceal haemorrhage, 17% of patients (1/6) rebled during the first hospital admission. The survival rate of 79.2% was influenced by the severity of liver failure, with most deaths occurring in C-P grade C patients in this study.

Repairing major laparoscopic bile duct injuries: What does it cost?

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Background. A major bile duct injury is an infrequent but potentially life-threatening complication after laparoscopic cholecystectomy. Few data exist about the financial implications of duct repair. We aimed to calculate the costs of operative repair in a cohort of patients who underwent bile duct reconstruction after major ductal injury.

Methods. A prospective database was reviewed to identify all patients referred to the University of Cape Town Private Academic Hospital between 2002 and 2011 for assessment and repair of major laparoscopic bile duct injuries. The detailed clinical records and billing information were evaluated to determine all costs from admission to discharge. Total costs for each patient were adjusted for inflation between year of repair and 2012.

Results. Thirty-four patients, including 25 female and 9 male of median age 49 years (range 32 - 71) with a major bile duct injury, were referred for management after a median of 21 days (range 1 - 280) following initial surgery. Patients were admitted to hospital for a median of 13.5 days (range 6 - 52 days). The mean cost of repair was R182 400 (range R70 112 - R395 515). Contributors to cost were hospital bed costs (27.4%), theatre costs (27.2%), radiology (16.1%), specialist fees (9.9%), consumables (8.1%), pharmacy (5.2%), endoscopy (3.3%) and laboratory costs (2.9%).

Conclusions. The cost of repair of a major laparoscopic bile duct injury is substantial due to prolonged admission to hospital, complex surgical intervention and intensive imaging requirements.

Efficacy of single-agent injection therapy in achieving haemostasis in patients with acutely bleeding peptic ulcers

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Background. Endoscopic therapy is the standard of care in patients with bleeding peptic ulcer disease. This study was undertaken to determine the efficacy of injection therapy, using adrenaline/saline solution (ASS) alone, with regards to the rate of rebleeding, need for surgery and death.

Methods. Over a 21-month period, data were prospectively collected regarding patients presenting to Groote Schuur Hospital with acute peptic ulcer bleeding and treated with endoscopic therapy. The rate of rebleeding, surgical or other intervention and mortality were recorded and analysed. In addition, demographic data, comorbidity, non-steroidal and aspirin use, length of hospital stay, transfusion requirements, endoscopic findings, Rockall score and aetiology of bleeding, were recorded.

Results. Eighty patients (median age 54 years, range 22 - 91) were included; 51/80 (63.8%) were male; 61/80 (76.3%) had successful primary haemostasis; 19 (23.7%) patients failed primary haemostasis and required either repeat endoscopy or surgical intervention; 17/80 (21.3%) underwent second endoscopic therapy. Overall, 6/80 (7.5%) required surgical intervention after failure of primary or secondary endotherapy. One patient underwent embolisation of the gastroduodenal artery. The mortality rate was 11.4% (9/80 patients); 8 died due to associated comorbidity (malignancy, IHD, CRF, CVA); 1 death was due to bleeding and miliary TB.

Conclusion. Single-agent endoscopic intervention controlled bleeding in 76% of patients with acute peptic ulcer bleeding. In those who rebled, second endoscopic management controlled bleeding in 70%. Surgery or embolisation was required in 8.8% of patients. Although overall mortality was 11%, medical comorbidity, rather than acute bleeding, accounted for 89% of deaths.

Correlation between HFE gene mutations and ALT levels may increase cardiovascular disease risk in patients with non-alcoholic steatohepatitis NASH

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Background. Both non-alcoholic fatty liver disease (NAFLD) and alanine transaminase (ALT) are independent risk factors for cardiovascular mortality. Non-alcoholic steatohepatitis (NASH), the histologically advanced form of NAFLD, is an independent risk factor for cardiovascular disease (CVD) morbidity and mortality.

Aim. Key genes involved in metabolic pathways relating to atherogenic dyslipidaemia, chronic inflammation, hypercoagulation and iron dysregulation implicated in insulin resistance as a common feature of NAFLD, were studied to identify a genetic subgroup at increased risk of cardiovascular mortality compared with controls.

Methods. A total of 178 patients diagnosed with NAFLD and 75 controls were studied using direct sequencing and real-time polymerase chain reaction (PCR) for mutation detection. The analyses included eight deleterious low-penetrance mutations in 5 genes: APOE2, APOE4, F2-20210, FV-Leiden, HFE-C282Y, HFE-H63D, MTHFR-677 and MTHFR-1298. Relevant biochemical determinations, including ALT level, were performed for all subjects and compared using appropriate statistical analyses.

Results. There was no statistically significant difference in genotype distribution for individual mutations between the NAFLD v. control subjects. However, in a sub-analysis a significant increase (p=0.04) in ALT levels was detected in NASH patients found to be heterozygous or homozygous for the HFE-C282Y and HFE-H63D mutations (n=10), compared with mutation-negative patients (n=34).

Conclusion. We could not implicate the genes selected from known pathways in increasing CVD risk in NAFLD patients. However, the close association between known risk factors for increased CVD morbidity and mortality, namely raised ALT, NASH and HFE mutations, was confirmed. Subjects with HFE gene mutations have been found to have an increased CVD risk. The role of such mutations in increasing CVD risk in NASH patients needs to be investigated.

A pooled analysis of perineal hernia repair after abdominoperineal resection

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Aim. The purpose of this study was to determine the treatment characteristics and clinical outcomes of patients with perineal hernia after abdominoperineal resection (APR).

Method. A systematic literature search revealed 40 individually documented patients (published between 1944 and 2010). Three patients treated at the Academic Medical Centre in the Netherlands were also included. Patient characteristics, repair type and outcome were recorded and a pooled analysis of the 43 patients was performed.

Results. Pooled analysis revealed a median time interval of 8 months between APR and surgical repair of perineal hernia. The surgical approaches were perineal in 22 patients, open abdominal in 11, open abdominoperineal in 3, laparoscopic in 5 and laparoscopic-perineal in 2 patients. A primary recurrence was documented in 13 patients and a second recurrence in 3. The recurrence rate was 5/25 for synthetic or biological mesh, 6/12 for primary closure and 2/6 for the remaining techniques. Recurrent perineal hernia was repaired using a synthetic or biological mesh (N=6), primary closure (N=5) or a muscle flap (gluteus or gracilis) (N=4).

Conclusion. From these limited and biased data based on published case descriptions, it appears that the recurrence rate of primary perineal hernia repair after APR is lower with the use of a mesh or other assisted closure in comparison with primary suture repair.

Note. This work was accepted for publication in *Colorectal Disease*: Mjoli M, *et al*. Colorectal Dis 2012;14(7):e400-e406 (online 8 June 2012).

A review of patients with chronic hepatitis C treated with pegylated interferon and ribavirin at a central referral hospital in Durban

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Introduction and objectives. Local experience in the treatment of hepatitis C virus (HCV) is relatively limited, primarily due to fewer HCV patients and limited resources compared with the developed world. Since 2006 the Gastroenterology Department at Inkosi Albert Luthuli Central Hospital (IALCH) has had access to pegylated interferon and ribavirin to treat suitable HCV patients. We describe our early experience with HCV treatment in a low-prevalence region, with particular reference to treatment outcomes.

Methods. A retrospective audit was performed of HCV patients who received treatment from the Gastroenterology Department between 2006 and 2011. Data were obtained from standard data sheets used to aid patient management during treatment and patient records. Demographics, genotype, early virological response (EVR) and sustained virological response (SVR) were recorded. Simple descriptive statistics were used to analyse data.

Results. A total of 7 patients received treatment. One patient who had genotype-1 infection, a high baseline viral load and type 2 diabetes mellitus, did not achieve an EVR and treatment was stopped after 16 weeks. One patient had genotype-1 infection, 3 had genotype-3, 1 had genotype-4 and 2 had genotype-5 infection. Five out of the 6 patients who completed a standard course of treatment achieved SVR (83%). Both patients with genotype-5 infection were treated for 48 weeks and achieved SVR.

Conclusion. Despite the small number of patients treated, it is rewarding to document that a significant number who completed treatment achieved SVR which equates to a cure.

Re-activated Wnt signalling is crucial in hepatocellular carcinoma pathogenesis in double-transgenic mice that constitutively over-express HBx and IRS-1 in the liver

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Background. Hepatocellular carcinoma (HCC) is associated Wnt/β-catenin with aberrant growth factor signalling. Both the insulin/insulin-like growth factor (IGF) and Wnt/β-catenin have been implicated in the pathogenesis of HCC. To date there are no therapeutic molecules targeting this pathway; therefore, identifying the target genes of Wnt signalling remains critical for understanding β-catenin-mediated carcinogenesis.

Aim. The purpose of this work was to characterise the gene expression patterns of Wnt/β-catenin signalling in a double-transgenic mouse model of HCC.

Methods. We analysed liver tissue from mice sacrificed at various time points (n=12 per time point) by quantitative real-time polymerase chain reaction (qRT-PCR) using a PCR array panel. Wildtype mice were used as controls.

Results. Tumours developed only in male mice generally after 15 - 18 months. The majority of Wnt ligands, receptors and downstream targets were upregulated in mice without tumours at early time points. However, some genes including *Wnt-1*, *-2*, *-3*, *-4*, *-6*, *-7b*, *-11* and *Fzd-8*, *-2*, *-3* and *Fzd-b* were also upregulated in HCC (occurring at later time points), suggesting re-activation of Wnt signalling in HCC. Specifically *Wnt-5b* and *-7b* were significantly upregulated in mice with tumours, suggesting they may be key regulators in hepatitis B virus (HBV)-related HCC.

Conclusions. Our study identified several candidate genes of Wnt signalling, particularly *Wnt5b* and *-7b* that are dysregulated and in combination with 1 or more co-factors, i.e. HBx and/or insulin receptor substrate-1 (IRS-1) are carcinogenic in mouse HCC. These genes may serve as useful potential therapeutic targets for the treatment of HCC.

IL28B polymorphisms are not predictive in South African patients infected with hepatitis C genotype 5

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Background. Hepatitis C virus (HCV)-genotype 5 (G5), endemic in southern Africa, is often neglected in major trials. While single nucleotide polymorphisms (SNPs) of the interleukin-28B gene (*IL28B*) on chromosome 19 have been associated with treatment response in genotypes 1 - 4, scant data and only in white patients, suggest no predictive value of *IL28B* in HCV-G5. No such data exist for South African patients or those of different ethnicities.

Methods. Genomic DNA was obtained from peripheral blood mononuclear cells (PBMCs) in a cohort of G5 patients and analysed for the rs12979860 SNP near *IL28B*. Treated patients in the cohort had received peg-interferon-α-2a and weight-based ribavirin. Genotypes were analysed for their association with treatment response.

Results. In a cohort of 35 patients, 28 who had completed treatment were evaluated. Of these, 57% (16) were male, mean age was 52.5±12.1 years in men and 54.8±10.5 years in women. Median alanine transaminase (ALT) was 66 IU/ml (range 14 - 215), fibrosis score (F) was 2 (n=22) and baseline HCV ribonucleic acid (RNA) was 6.05 (3.6 - 7.4) log IU/ml. F≥3 was present in 27% of patients. Median body weight was 80 kg (range 53 - 130). Overall, the frequencies of the rs12979860-IL28B genotype were CC=25%, TC=43%, TT=32% with the distribution, respectively; in blacks (n=14) being CC=14%, TC=36%, TT=50% and in whites (n=11) being CC=36%, TC=54%, TT=9%. Genotypes were equally distributed in those of mixed ancestry. Overall, a rapid viral response (RVR), early viral response (EVR), end-of-treatment response (ETR) and sustained viral response (SVR) rate was seen in 60% (17), 100%, 96% (27) and 84% (22) of patients, respectively. The odds ratios (95% confidence interval) for an RVR and SVR for genotype CC v. non-CC (1.9, range 0.3 - 11.9, p=0.5; 0.6, range 0.1 - 4.2, p=0.59), TT v. non-TT (0.4, range 0.1 - 1.9, p=0.37; 0.9, range 0.1 - 6.4, p=0.94) and TC v. non-TC (1.6, range 0.3 - 7.4, p=0.57; 1.7, 0.3 - 11.1, p=0.59) were not predictive of response to treatment. In addition, ethnicity viz. black v. white, did not influence the probability of achieving an RVR (p=0.88) or SVR (p=0.35).

Conclusions. In this albeit modest cohort of treated HCV-G5 patients of different ethnicities, *IL28B* polymorphisms did not significantly predict RVR or SVR. This may reflect that the viral kinetics of HCV-G5 more closely resemble -G2 and -G3, although a larger study is required to confirm this finding.

Pneumatic balloon dilatation v. laparoscopic Heller's myotomy for achalasia: A prospective evaluation

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Background. Laparoscopic Heller's myotomy (LHM) and pneumatic balloon dilatation (PBD) are widely used in the management of achalasia. Consensus among experts on the superior treatment modality is lacking.

Methods. Achalasia patients who presented between 1999 and 2007 were assessed for entry into a randomised controlled trial between LHM and PBD. Clinical data were collected prospectively, including weight loss, dysphagia, chest pain, regurgitation, heartburn and dysphagia score. Due to patient preference, only one-third of patients were randomised to either therapy. Both randomised and non-randomised patients were evaluated. The primary outcome of success was defined as relief of dysphagia without the need for an alternative intervention. Complication rate was evaluated as a secondary outcome.

Results. Twenty-nine of the 45 patients (64%) had PBD and 16 (36%) had LHM. There was no difference between the 2 treatment groups with regards to baseline characteristics. The median follow-up period was 30 months (range 1 - 96 months). The success rate in LHM patients was 81% (13/16) v. 69% (20/29) for PBD. This trend was not significant. None of the clinical parameters evaluated were predictive of failure risk. The complication rate was confined to the LHM 11% (5/45) and included 2 perforations in the LHM arm, recognised and treated during the initial procedure and a peptic stricture.

Conclusion. Although there is a bias in favour of LHM, the 2 treatment modalities are comparable in efficacy. Interventions were safe with no mortality.

Management of hepatitis C virus infection at Chris Hani Baragwanath Academic Hospital, Johannesburg

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Introduction. Hepatitis C virus (HCV) is a leading cause of chronic liver disease, cirrhosis and hepatocellular carcinoma. South Africa (SA) has a low prevalence of HCV infection (0.16 - 1.8%).

Objectives. To report our experience in the management of HCV infection at Chris Hani Baragwanath Academic Hospital (CHBAH).

Methods. Consecutive patients attending CHBAH hepatitis C clinic between 2007 and April 2012 were considered for enrolment. Demographics, clinical data, HCV genotype and treatment response were analysed. Patients were treated with peginterferon-α-2a and ribavirin according to SA guidelines.

Results. Fifty-eight patients (30 male, 28 female; mean age 52.4 years) were enrolled. The majority were blacks (46; 79.3%), followed by Asians (7; 12.1%), and whites (5; 8.6%). The predominant HCV genotype was 5a (26; 44.8%), all occurring in black patients. Among the remaining 32 patients, 11 had genotype 1; 9 had genotype 3 (mostly Asians); 6 had genotype 4 (3 from the DRC); and 3 patients had 2 genotypes (1b and 4a; 1b and 5a; 1 and 4). Genotyping was not performed in 3 patients. Thirty-six patients (62.1%) received treatment: 17 achieved sustained viral response (SVR), 3 were non-responders (all genotype 1 with compensated cirrhosis), treatment is ongoing in 13, 2 relapsed and treatment was ceased in 1 due to adverse events. Nineteen patients did not qualify for treatment (decompensated cirrhosis in 14) and 3 were lost to follow-up. Twenty-one of the 36 patients developed side-effects.

Conclusion. HCV genotype 5 occurred exclusively in black patients. They responded well to therapy but, if untreated, followed the same natural history. Treatment was generally well tolerated with the most common side-effect being bone marrow suppression, which responded to dose adjustments and supportive therapy.

An unusual cause of upper gastrointestinal bleeding

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Introduction. Most of the causes of brisk upper gastrointestinal bleeding can be diagnosed during oesophagogastroduodenoscopy. However, the diagnostic dilemma ensues when no cause for the bleeding is readily obvious.

Case presentation. A 45-year-old female patient with HIV infection (CD4 count of 445 cells/µl) presented to the emergency department with acute haematemesis. She was pale, haemodynamically stable with 8 g/dl haemoglobin, had a normal coagulation profile and cholestasis on liver function tests (LFTs). Urgent endoscopy was performed, which was normal. During admission, the patient developed malaena and her haemoglobin dropped to 3.8 g/dl. Repeat endoscopy showed a normal oesophagus, stomach and duodenal cap. Upon touching the ampulla of Vater, a jet of blood spurted through the ampulla (haemobilia). Urgent angiography of the coeliac axis was performed and revealed multiple aneurysms of the hepatic, left gastric and left gastroduodenal arteries, which were subsequently embolised. A diagnosis of HIV vasculopathy was made. The patient remained well with no further bleeding in the ensuing period and was subsequently discharged with a referral for initiation of antiretroviral therapy.

Discussion. Haemobilia is a relatively common under-diagnosed cause of upper gastrointestinal bleeding with considerable morbidity and mortality. Angiography can aid in depicting the source of active bleeding. Aneurysms associated with HIV vasculopathy have been described mainly in the cerebral and popliteal circulations, with few reports of mesenteric and portal circulation vasculopathy. Clues to diagnosis include the presence of multiple aneurysms on angiography in an HIV patient, and are often associated with deranged LFTs.

Single institution experience with Zollinger-Ellison syndrome: Causes of death and survival pattern

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Background. Mortality in Zollinger-Ellison syndrome (ZES) is not clearly established. We report a mortality analysis in a tertiary institution cohort.

Patients and methods. Forty-eight consecutive ZES patients were managed at Groote Schuur Hospital between 1978 and 2012. Thirty-five males (73%) and 13 females (27%) were diagnosed at a mean age of 40 years. Forty (83%) patients had sporadic disease and 8 (17%) had multiple endocrine neoplasia type-1 (MEN-1).

Results. Nineteen patients with a mean follow-up of 10.4 years died during the study period; 4 had MEN-1-associated gastrinoma. Nine patients are still attending follow-up (mean 19.7 years). Twenty patients had variable follow-up with a mean of 8.5 years. Five deaths were related to ZES, 2 patients died from duodenal ulcer haemorrhage, 1 from post-operative septic complications following repeated surgery, 1 from tumour progression, and 14 deaths were unrelated to ZES.

Conclusion. ZES is compatible with long-term survival. The majority of deaths are unrelated to ZES. Death from tumour progression is rare. Patients undergoing recurrent surgery are at increased risk of complications-related death.

A single-institution experience of type-1 multiple endocrine neoplasia (MEN-1)-associated gastrinoma

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Background. Multiple endocrine neoplasia type-1 (MEN-1) is a rare autosomal dominant disease affecting parathyroids, pancreas and pituitary glands.

Patients and methods. We report a single-institution experience over a 32-year period of 8 patients with MEN-1 identified from 48 patients with Zollinger-Ellison syndrome. The mean age at diagnosis was 38 years.

Results. Seven patients presented with ZES or its complications, while 1 patient presented with hypercalcaemia. The average delay from onset of symptoms to diagnosis of ZES/MEN-1 was 6.5 years. Prior to diagnosis, 8 patients had surgery for peptic ulcer complications and 2 had parathyroidectomy. Prolactin was raised in 8 patients, abnormal pituitary/cella turcica was seen on computed tomography (CT) in 6 patients and 1 patient had acromegaly. Five patients underwent post-diagnosis parathyroidectomy with immediate normalisation of calcium in 4 and repeat surgery required in 1 patient. After diagnosis, 3 patients had no further surgical intervention for ZES. One patient had total gastrectomy. One had distal pancreatectomy and total gastrectomy. The remaining 3 patients each had 2 debulking procedures for a variety of pancreatic neuroendocrine tumours. No clinical or biochemical cure was achieved in this cohort. The median survival time was 18 years. There were 4 patient deaths, and 3 patients were lost to follow-up. One patient is alive and well.

Conclusion. This study confirmed that surgery does not cure MEN-1-associated ZES. Screening for MEN-1 is required in all ZES patients even in the absence of family history. Long-term survival is the rule; hence, follow-up to detect metachronous neuroendocrine tumours is important.

HLA-DQ genotype distribution in type 1 diabetes mellitus patients with concomitant coeliac disease

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Background and aims. The estimated prevalence of coeliac disease (CD) in patients with type 1 diabetes mellitus (T1DM) is 5%. CD and T1DM, both multifactorial diseases, are strongly clustered in families. In both, human leukocyte antigen (HLA) class II molecules HLA-DQ2.5 (DQB1*02-DQA1-05) and DQ8 (DQB1*0302 - DQA1*0301) are key genetic risk factors. We aimed to investigate HLA-DQ distributions in patients diagnosed with both T1DM and CD. Associations were examined between HLA-DQ and age of clinical onset and autoimmune comorbidity.

Material and methods. Patients with T1DM and concomitant CD were recruited from 33 hospitals in the Netherlands. We retrospectively collected data at T1DM and CD diagnosis, and regarding comorbidity of autoimmune diseases. T1DM diagnosis was defined as an absolute requirement of insulin, while CD diagnosis was based on international criteria (European Society for Paediatric Gastroenterology, Hepatology and Nutrition). Genomic DNA obtained from peripheral blood was used for typing of HLA-DQA1* and DQB1* alleles, performed with a combined single-stranded conformation polymorphism (SSCP)/ heteroduplex method by semi-automated electrophoresis and gel-staining. Patients were divided into two groups, childhood-onset T1DM (before age 20 years) and adult-onset T1DM, because childhood-onset is strongly associated with HLA haplotypes.

Results. The total cohort consisted of 61 patients diagnosed with T1DM and CD (67.2% female; mean age 39.8±19.8 years; T1DM and CD duration of 22.6±16.8 years and 8.3±10.4 years, respectively). All patients were unrelated and self-reported Dutch whites. Patients carried HLA-DQ2.5 in 80.3% (50.8% heterozygous and 29% homozygous). Only 6/61 (9.8%) patients were diagnosed with CD before T1D; 50% of them were HLA-DQ2.5 homozygous. In the childhood-onset T1DM group (n=38), mean age of T1DM

onset was significantly lower in HLA DQ-8 heterozygotes v. other genotypes (4.9 v. 8.0 years; p=0.04).

Conclusions. In patients with T1DM and CD, an 80.3% prevalence of carriers of HLA-DQ2.5 was found. Interestingly, in the childhood-onset T1DM group, a younger age of T1DM onset is associated with heterozygous HLA-DQ8. No associations were found between HLA-DQ type and the prevalence of autoimmune comorbidity or CD onset.

Surgery for giant-giant gastric ulcers – the bedsore of the stomach: A report of 6 recent cases

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Introduction. Patients with giant gastric ulcers (≥3 cm) are significantly older and have more aggressive disease, reflected by a higher incidence of bleeding, anorexia, weight loss and emergency admission (Raju GS *et al., Am J Gastroenterol* 1999;94:3478-3486). These patients need prolonged aggressive treatment, with excellent compliance. The author wishes to propose a further subgroup of giants ulcers that are ≥3 cm but also have a deep penetrating base into adjacent organs (crater), where the base of the crater is an organ, usually the pancreas, liver or porta hepatic.

Postulate. These giant-giant (bedsore) ulcers will not heal, but become chronic and complicated with treatment. A low threshold for early referral to surgery is necessary. If little improvement is seen after 3 months of adequate medical treatment, surgery is indicated.

Material and methods. Six patients underwent emergency operations for uncontrollable haemorrhage from large penetrating gastric ulcers between December 2011 and May 2012. All patients needed definitive gastric surgery to control haemorrhaging (subtotal gastrectomy/antrectomy, including the ulcer, with or without truncal vagotomy).

Conclusion. Patients with giant penetrating gastric ulcers need early referral for definitive surgery. A low threshold for referral is imperative.

Malignant biliary obstruction: Plastic v. metal stents for palliation of symptomatic jaundice

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Background. Both plastic and self-expanding metal stents (SEMS) have been used to relieve jaundice in patients with advanced malignant biliary obstruction. This study compared the clinical efficacy of plastic v. metal biliary stents.

Materials and methods. In a prospective randomised controlled trial 37 patients with malignant common bile duct obstruction not amenable to curative resection were offered palliative stenting from November 2008 to March 2012 and were followed-up until death. We compared patient survival and stent patency rates.

Results. Seventeen patients received 10 Fr. plastic stents and 20 patients received SEMS. Mean duration of hospital stay after stenting was 2 days (range 1 - 2). One patient in each group remained jaundiced despite adequate biliary drainage. Plastic stents blocked more frequently than SEMS (47.5% v. 10.0%; p=0.015). In the SEMS group, 3 patients required re-admission to hospital (total 31 days) and median survival was 116 days, compared with 5 re-admissions (total 54 days) and a median survival of 105 days in the plastic stent group. Preliminary cost analysis showed similar costs per patient in both groups.

Conclusion. Plastic 10 Fr. biliary stents block more frequently than SEMS, which have a better patency rate and are associated with fewer hospital re-admissions. Metal stents are cost-effective in palliating malignant biliary obstruction in a public sector hospital.

Autoimmune hepatitis at Chris Hani Baragwanath Academic Hospital

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Background. Autoimmune hepatitis (AIH) is a chronic inflammatory liver disease of any age, evidenced by variable and fluctuating clinical features and serum auto-antibodies.

Aim. To report experience with AIH at Chris Hani Baragwanath Academic Hospital (CHBAH).

Methods. An audit was performed of 15 AIH cases identified after a review of 243 patients attending the liver clinic at CHBAH between 2009 and 2012. Demographics, clinical, laboratory and histology data, auto-antibodies, derived clinical scores and therapy were reviewed.

Results. Mean age of the 15 patients (14 females, 1 male) was 33.3 years (range 14 - 68 years); 50% of the cohort had significant disease, initial mean model for end-stage liver disease (MELD) score of 14.8 (6 - 26). Mean initial bilirubin was 92.38, improving to 16.35 after treatment. Mean alanine transaminase (ALT) improved from 345.23 to 45.85 IU/ml. Ten cases tested positive for antinuclear antibodies (ANA). Anti-smooth-muscle antibody (ASMA) testing was positive in a single case. No cases tested positive for antibodies to liver/kidney microsomes (ALKM). Eight liver biopsies were performed; 6 were typical. Treatment improved the Child-Pugh score to a mean of 6.2 (range 5 - 10). Comorbid diseases were observed, including type 1 diabetes in 2 patients and single cases of hyperthyroidism, interstitial lung disease, non-Hodgkin's lymphoma and ulcerative colitis with primary sclerosing colangitis. Initial treatment included prednisone followed by azathioprine. Currently, 10 patients are still receiving low-dose prednisone.

Conclusions. AIH at CHBAH has a female predominance and mainly affects young adults; 50% are clinically ill at presentation. ANA testing was a good indicator of disease, while ASMA and ALKM testing were not; anti-liver cytosol (ALC) may be a better option. Liver biopsies proved to be typical. Most patients responded very well to immunosuppressive therapy.

Endoscopic management of bile leaks after laparoscopic cholecystectomy

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Background. A bile leak is an infrequent but potentially serious complication after biliary surgery. The aim of this study was to assess the effectiveness of endoscopic management.

Methods. An endoscopic retrograde cholangiopancreatography (ERCP) database was retrospectively reviewed to identify all patients with bile leaks after laparoscopic cholecystectomy.

Results. One hundred and thirteen patients (92 women, 21 men) of median age 47 years (range 22 - 82) with a bile leak were referred

at a median of 18.1 days (range 1 - 226) after surgery. Symptoms included pain (13; 11.5%), abnormal liver function tests (LFTs) (22; 19.5%), bile leak (25; 22.1%), intra-abdominal collections (45; 39.8%) and sepsis (8; 7%). Twenty-nine patients (25.7%) were found to have a major bile duct injury without duct continuity, requiring surgery. Forty-four patients had a cystic duct (CD) leak, 26 had a CD leak and common bile duct (CBD) stones, and 14 patients had a CBD injury amenable to endoscopic stenting. In the 70 patients with CD leaks, 24 underwent a sphincterotomy (including 8 stone extractions), 43 had a sphincterotomy and stenting (including 18 stone extractions), 1 patient had stenting only, while 2 with previous sphincterotomies required no further intervention. Of the 14 patients with CBD injuries treated endoscopically, 7 had a class D injury, 3 had a class E5 injury, 3 had a class B injury and 1 had a biliary stricture. The 113 patients underwent a total of 269 ERCPs (mean 2.4; range 1 - 7).

Conclusions. Bile leaks after laparoscopic cholecystectomy in 75% of patients were due to CD leaks (with or without retained stones) or lesser bile duct injuries; these were amenable to definitive endoscopic therapy.

Inflammatory bowel disease (IBD) in Soweto

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Background. IBD is an integrated group of disorders characterised by recurrent, destructive inflammation of the gastrointestinal tract. The most common forms include ulcerative colitis (UC) and Crohn's disease (CD). Most studies arise from Western populations; few, if any, describe IBD in the South African black population.

Aim. To establish a formal IBD clinic at Chris Hani Baragwanath Academic Hospital (CHBAH), we assessed the demographics, disease spectrum and treatment responses in a cohort of CHBAH patients.

Methods. From January 2011 to March 2012 all patients with a confirmed diagnosis of IBD on histology, irrespective of original date of diagnosis, were recruited. Patient files were analysed and data collected.

Results. Thirty-five patients, including 20 females, were recruited; 88.6% were black, 8.6% were white and 2.8% were Asian. IBD subtypes included UC (91.4%) and CD (8.6%). In the latter, only 2 patients were black and 1 was white. In the UC group, left-sided colitis comprised 47%, pancolitis 44% and distal colitis 9%. The most common extra intestinal manifestation was primary sclerosing cholangitis, followed by arthropathy. No patient had skin or eye involvement. The mainstay of treatment included salazopyrin, corticosteroids and azathioprine. No patient was on 6-mercaptopurine (6MP) or biologicals. Three patients were defined as having steroid-dependent CD (too small for further analysis).

Conclusion. IBD is common in our Soweto community. A high index of suspicion is needed for the diagnosis of more cases. Specialised clinics and registries are needed to improve patient outcome and quality of life.

Case summary: The neuroendocrine tumour effect

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History. We report a case of a 53-year-old male patient who presented with syncope and haematemesis in a second presentation after almost 1 year. Gastroduodenoscopy 1 year preceding was reported as normal. No other previous background history was notable.

Examination and findings. The patient appeared well, apart from postural hypotension and sinus tachycardia. His haemoglobin was 14.5 g/dl and coagulation profile was normal. At 22h00 he complicated and had massive haematemesis necessitating intensive care unit (ICU) admission. The patient was resuscitated and received a proton pump inhibitor (PPI) infusion. Emergency endoscopy revealed blood in the stomach, making visualisation difficult. Endoscopic haemostasis was achieved with epinephrine injections blindly at the site thought to be bleeding. Repeat endoscopy revealed a reddish mass lesion along the lesser curvature of the stomach, with active bleeding, resulting in emergency surgery. At surgery, a well-delineated mass was found with histology consistent with a well-differentiated neuroendocrine tumour (NET) that extends into the muscularis. Gastrin and chromogranin A were normal. A diagnosis of a type 3 NET was made. Octreoscan showed no evidence of distant disease. He was referred to oncology and completed chemotherapy. He has had an excellent outcome so far.

Discussion. Although rare, NET must be considered as a cause of haematemesis. Various diagnostic tools including specific urine and serum markers may help to identify a specific tumour type Tumour localisation and metastasis is performed via endoscopy, radiological imaging and somastatin receptor scintigraphy. Treatment modalities include surgery, somastatin analogues, chemotherapy and radiotherapy.

HIV/AIDS cholangiopathy, biochemical, histological and cholangiographic features in a South African cohort

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Background. HIV-associated cholangiopathy is considered rare – a form of biliary inflammation characterised by abnormal cholestatic liver enzymes and biliary duct irregularities. The aetiology remains unclear. Opportunistic infections are implicated.

Objectives. To describe the biochemical, cholangiographic and histological findings in HIV-positive patients with abnormal cholestatic liver enzymes.

Methods. In a pilot study, data were collected from our Liver Clinic. HIV patients with elevated cholestatic enzymes (>2 times the upper limit of normal for alkaline phosphatase (ALP) and gamma glutamyl transferase (GGT)), but without viral, drug, autoimmune hepatitis or diabetes or high level of alcohol consumption were recruited. All patients underwent an ultrasound to exclude obstructive aetiologies. Endoscopic retrograde/magnetic resonance cholangiopancreatography (ERCP)/(MRCP) and liver biopsy was performed in selected cases.

Results. From December 2011 to March 2012, 19 patients (including 10 men) were recruited. Abdominal pain (n=12) was the most common manifestation; the remaining patients were asymptomatic. Mean ALP and GGT were 720 U/l and 1 127 U/l, respectively. The mean CD4 lymphocyte count was 120 cells/mm^3. Only 3 patients were on highly active antiretroviral therapy (HAART) at presentation. Ultrasonography was abnormal in only 3 patients (dilated common bile duct); 63% underwent ERCP, with the major finding being paucity of the peripheral bile ducts (58%). The most common finding on liver histology was granulomatous hepatitis (32%). Mycobacterium was the most common opportunistic infection.

Conclusion. HIV-associated cholangiopathy is not uncommon in the SA HIV population. ERCP is an important diagnostic and therapeutic modality. Liver histology is a powerful diagnostic tool for opportunistic infections.

Clinical, laboratory and outcome data of hepatocellular carcinoma in Mozambique

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Background. Hepatocellular carcinoma (HCC) is a lethal cancer and represents the fifth most common malignancy in the world. Data on clinical and laboratory characteristics and prevalence of hepatitis virus infection among HCC patients in Mozambique are scarce. We aimed to investigate these parameters in HCC patients attending Maputo Central Hospital (Hospital Central de Maputo) (HCM).

Methods. Between March 2011 and April 2012, 105 patients with HCC attending HCM, were enrolled and screened for hepatitis B virus (HBV), hepatitis C virus (HCV) and HIV. Alpha-fetoprotein levels, abdominal ultrasound and fine needle aspiration (FNA) for cytology were performed routinely. Clinical and demographic data were collected using a standard questionnaire.

Results. HCC was most frequent in men (72.4%) and mean patient age was 49.7±15.7 years. Lower educational level, history of smoking and alcohol intake were found in 69%, 5.7% and 58% of patients, respectively. The prevalence of HBV, HCV and HIV infection was 52.9%, 4.9% and 11.9%, respectively. HBV/HIV co-infection was found in 9% of patients. No patient was co-infected with HBV/HCV or HCV/HIV. Alpha-fetoprotein was >400 UI in 62.7% of patients. Multinodular presentation in the liver was detected by ultrasound in 80%. Mean survival was 66.5±6.7 days.

Conclusions. Overall, our data demonstrated that chronic HBV infection is highly prevalent in Mozambican HCC patients, suggesting that HBV represents the major cause of HCC. The poor survival rate may reflect the advanced stage of tumours at the time of diagnosis.

Colorectal cancer in Ugandan patients: A morphological study

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Introduction. Colorectal cancer (CRC) is uncommon in Africa. Inherited cancers may account for a greater portion of the disease burden in low- v. high-incidence areas. CRC-related demographics and histological features and the incidence of hereditary nonpolyposis colorectal cancer (HNPCC) in African populations are largely unknown.

Aim. To assess the demographic and morphological features of CRC patients from hospitals in Mulago and Mbarara, Uganda.

Methods. Histopathological specimens of 81 Ugandan CRC patients (2006 - 2010) were retrospectively reviewed. Demographic data were retrieved from medical records. Tumours were examined to determine histological features suggestive of mismatch repair gene mutations (according to the revised Bethesda guidelines for microsatellite instability testing).

Results. The median CRC patient age was 55 years (range 20 - 89) at diagnosis; 30.6% and 6.9% were aged <50 and <30 years, respectively. Tumours were mostly (94.9%) located in the left side of the colon. Mucinous adenocarcinoma was significantly more common in patients aged <50 years. Based on the histological and demographic features, 22/81 (27.3%) patients met at least 1 criterion of the revised Bethesda Guidelines for MSI testing.

Conclusions. Histological and demographic features suggestive of HNPCC were identified in 27.3% of patients. These features appear to be quite different from published data from First-World countries. The lack of endoscopic equipment in Uganda may account for the majority of cancers being left-sided.

MRCP and ERCP demonstration of biliary tract disease

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Introduction. Hepatobiliary diseases are often effectively diagnosed by abnormal liver biochemical tests and ultrasonography. However, there are also unusual cases that may require additional diagnostic procedures such as magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangiopancreatography (ERCP). Clinical features often do not present the true extent of the disease, especially in patients with AIDS-related cholangiopathy. This presentation reports a case of biliary disease diagnosed and managed by MRCP and ERCP.

Case description. A 23-year-old female who had used highly active antiretroviral therapy (HAART) and anti-tuberculosis drugs, presented with jaundice, fever and dry cough. Clinical examination and liver enzymes tests were suggestive of hepatobiliary disease. The patient's alanine transaminase (ALT) was 48 IU/l, aspartate transaminase (AST) was 559 U/l, AST-platelets-rate-index was 6.1, alkaline phosphatase (ALP) was 209 U/l and gamma-glutamyl transpeptidase (GGT) was 38 U/l. In addition, cytomegalovirus (CMV) DNA analysis by polymerase chain reaction (PCR) revealed 584 000 copies/ml, with a CD4 cell count of 125 cells/mm^3 and CMV pneumonitis. Ultrasonography showed only acalculous cholecystitis (ACC) with pericholecystitis fluid; also seen with MRCP. ERCP revealed sclerosing cholangitis in a setting of vanishing bile duct syndrome (VBDS), ulcerated stenotic duodenal papillitis and ACC.

Discussion. MRCP and ERCP performed equally well. MRCP should be used to screen AIDS patients, irrespective of the pattern of the liver enzymes abnormalities. MRCP also helps to select appropriate patients for ERCP, which will be required to obtain tissue samples for microbiological studies and for sphincterotomy (if needed).

Repeat endoscopic rapid urease test as a surrogate marker for the success of *Helicobacter pylori* eradication

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Background. Amoxil and metronidazole are first-line antimicrobial eradication therapy for *Helicobacter pylori* infection at Groote Schuur Hospital. Metronidazole resistance is purported to be high. There are no local data assessing the efficacy of this strategy.

Methods. We evaluated the efficacy of antimicrobial therapy in patients with *H. pylori* infection, in patients with a positive rapid urease test (RUT) at initial endoscopy and who underwent a repeat endoscopy and RUT. Data analysed included those from a prospective endoscopy database that were merged with the antibiotic regimen dispensed from our pharmacy database. A positive RUT at index and a negative RUT at repeat endoscopy were considered successful eradication.

Results. Over a 48-month period, 270 patients positive for *H. pylori* infection at index endoscopy underwent a repeat endoscopy and repeat RUT; 132 patients had a positive RUT at index, but negative RUT at repeat endoscopy; *H. pylori* was considered to be successfully eradicated in 132/270 (49%). One hundred and thirty-eight patients were positive for *H. pylori* infection at both index and

repeat endoscopy. Seventy-four patients received antibiotic therapy at the index endoscopy, from our pharmacy. Sixty-four of 138 (46.4%) patients did not receive treatment from our pharmacy at index endoscopy. After excluding those who did not receive therapy, the failure rate for *H. pylori* eradication was 74/206 (36%).

Conclusions. This selected sample revealed an *H. pylori* eradication rate of 36%, far below the standard efficacy rate of <10%. The study also identified a possible prescription-dispensing problem that may have contributed to the high eradication failure rate.

A clinicopathological spectrum of anal cancer in Kwazulu-Natal

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Aim. To document our experience with the management of anal cancer presenting to the KwaZulu-Natal teaching hospitals.

Methods. We analysed prospectively collected data on anal cancer patients from 2004 to 2011, including demographics, clinical presentation, tumour site, treatment, outcome and follow-up.

Results. One hundred and thirty patients were included in the study (M:F ratio, 1:1, mean age, 51±14.0 years). Presenting symptoms were anal mass (41), bleeding (27), ulcer (24), loss of weight and/or appetite (19), anal pain (18), peri-anal abscess/fistula (16), change in bowel habit (14), warts (8), and incontinence (6). Mean duration of symptoms was 15.37±19.41 months. Histology confirmed squamous carcinoma in 95, adenocarcinoma in 33, melanoma in 1 and neuroendocrine tumour in 1. There were 104 anal margin tumours and 26 anal canal tumours. Ten patients (8%) had distant metastases at diagnosis. Ten patients (8%) were eligible for surgery. The remainder were managed non-operatively. Seventy-nine patients were lost to follow-up and the rest were followed up for 1 - 69 months (mean 16±17.0 months). Eleven patients have been confirmed to have died so far.

Conclusion. Anal cancer affects all population groups with an equal incidence in both sexes. Squamous carcinoma was 3 times as common as adenocarcinoma. Anal margin tumours were 5 times as common as anal canal tumours. Delayed clinical diagnosis leads to poor prognosis.

Metastatic colorectal cancer in KwaZulu-Natal: A 12-year experience

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Background. The liver is the most common site of colorectal metastases, followed by the lungs.

Aim. To evaluate our experience with the clinical presentation, management and outcome of metastatic colorectal cancer (CRC).

Methods. We analysed data from a prospectively compiled CRC database (2000 - 2011), pertaining to demographics, clinical presentation, disease staging, treatment, outcome and follow-up.

Results. Of 1 424 CRC patients, 245 (17%) had metastatic CRC (mean age 57.5±14.6 years; 1:1 male:female ratio). Primary sites were ascending colon and caecum (31), hepatic flexure (7), transverse (9), splenic flexure (4) descending (8), sigmoid colon (150), rectum (122). Sites of metastases were liver (172; 70%), lung (47; 19%), peritoneum (21; 9%), omentum (12; 5%), ovaries (8; 3%) and miscellaneous (9). Ninety-five patients (39%) underwent resection of the primary tumour. Two hundred and twenty-five patients (92%) presented for oncology treatment and follow-up, while 60 patients refused, absconded or were too ill for oncological treatment. Excision of liver and lung metastasis was performed in 1 patient each. Mean follow-up was 15±17.3 months. Overall, 58 patients died (24%); 2 following resection and 56 due to disease progression.

Conclusion. Metastatic colorectal carcinoma accounts for 17% of CRC in KwaZulu-Natal. The liver is the most common site. The surgical intervention rate is extremely low in our setting. Patient follow-up remains a problem. Not surprisingly, there is an appreciable mortality.

Predictors for new bleeding in patients with higher digestive haemorrhage due to portal hypertension in Maputo Central Hospital, Mozambique

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Objective. Variceal rebleeding frequently develops after acute variceal bleeding and is the most life-threatening complication in patients with cirrhosis. We aimed to ascertain the predictive factors of new episodes of bleeding due to rupture of oesophageal varices (EHV) and first episodes of bleeding after placement of elastic bandages in patients suffering from portal hypertension (PHT).

Methods. In 2011 we analysed 436 consecutive patients, presenting between 2003 and 2009, with endoscopically proved degree III and IV varices at the Endoscopy Unit of Maputo Central Hospital (Hospital Central de Maputo) (HCM). Two-hundred and thirteen patients were diagnosed with higher digestive haemorrhage at admission (first arm) and 223 with PHT (second arm) underwent endoscopic variceal band ligation.

Results. In the first arm, 28 (13.1%) patients rebled; 19 (68.0%) rebled after 6 weeks. In the second arm, 15 (6.7%) patients bled; in 12 (80.0%) this occurred after 6 weeks. Using multivariate analysis, irregular follow-up (OR 4.0, 95% confidence interval (CI) 1.7 - 9.2, $p<0.001$) and pancytopenia (2.99, 95% CI 1.33 - 6.73, $p<0.01$) were, independently, predictors of rebleeding in the first arm. In the second arm, irregular follow-up (4.2, 95% CI, 1,4 - 12.4, $p<0.004$), pancytopenia (OR 4.2, 95% CI, 1.32 - 12.4, $p<0.009$) and anaemia at admission (OR 10.5, 95% CI, 1.6 - 68.5, $p<0.003$) were, independently, predictors of bleeding.

Conclusions. Irregular follow-up and pancytopenia in both arms, and anaemia in the second arm, are predictors of new episodes of bleeding in our setting.

A case of collagenous gastritis in an 18-year-old black female from Zambia

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Case report. An 18-year-old black Zambian female residing in Johannesburg presented with vomiting, fatigue and malaise. Aside from pallor, her physical examination was normal. Her full blood count showed hypochromic microcytic anaemia. Her haemoglobin (Hb) was 4.7 g/dl, MCV (mean corpuscular volume) was 68.8 fl, and white cell count and platelet counts were normal. Further investigation showed severe iron deficiency anaemia with 1.1 µmol/l (9.0 - 30.4) serum iron, 2 µg/l (5 - 148) ferritin and 1% percentage saturation. Vitamin B_{12} and red cell folate levels were normal. Gastroscopy showed an extensive pangastritis with nodular infiltrate most marked in the fundus and corpus of the stomach. The nodules were 4 - 8 mm

in diameter. No active bleeding, erosions or ulceration was noted. The duodenum and oesophagus were normal macroscopically. Biopsy of the affected lesions showed severe chronic gastritis with severe activity, with evidence of erosions, focal ulceration and atrophy with focally prominent submucosal fibrosis. No intestinal metaplasia, dysplasia or malignancy was noted. *Helicobacter pylori* infection was not observed. The differential diagnosis was collagenous gastritis and auto-immune gastritis. Other differentials were scleroderma and post-radiation therapy changes. Extensive physical and biochemical investigation revealed no other abnormalities. Follow-up colonoscopy showed a normal-looking mucosa with no features of collagenous colitis. A diagnosis of collagenous gastritis was made. Follow-up gastroscopy after 1 year of oral 20 mg omeprazole daily showed similar endoscopic appearance. The iron deficiency was treated with intravenous iron and the patient's full blood count normalised. She is currently asymptomatic.

Outcome of cricopharyngomyotomy and diverticulopexy for Zenker's diverticulum

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Objectives. To determine the outcomes after long-term follow-up of patients who underwent Zenker's diverticulum repair using only cricopharyngomyotomy with diverticulopexy.

Methods. This is an observational descriptive study. Only patients with proven Zenker's diverticulum who underwent cricopharyngeal myotomy and diverticulopexy were included in the study. Patients with recurrences were included.

Results. Fifty-four cases were included; subject age ranged from 30 to 89 years with no sex predominance. Mean follow-up was 6 months. The main complaint was dysphagia and regurgitation. All patients improved with a cricopharyngomyotomy and diverticulopexy. There were 4 major complications and 1 recurrence.

Conclusion. Cricopharyngomyotomy and diverticulopexy for Zenker's diverticulum is a safe procedure for all patients, with very good outcome and long-term results.

An unusual cause of cholestasis: IgG4-associated sclerosing cholangiopathy

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Introduction. Autoimmune pancreatitis and IgG4-associated cholangitis are recently recognised pancreaticobiliary manifestations of IgG4-associated systemic disease. It may mimic pancreatic cancer, primary sclerosing cholangitis or cholangiocarcinoma.

Case presentation. A 68-year-old male presented with a 1-year history of steatorrhoea, weight loss and a 2-week history of jaundice with pruritus. The patient had no history of alcohol consumption. Clinical examination revealed jaundice and a firm 3 cm hepatomegaly. Biochemical testing showed cholestasis. An ultrasound demonstrated prominent intrahepatic ducts and dilated common bile duct; however, no obstructing lesion could be visualised. A magnetic resonance cholangiopancreatogram (MRCP) showed multiple strictures involving the intrahepatic ducts. Primary sclerosing cholangitis (PSC) was the most likely consideration. Colonoscopy was normal. Endoscopic ultrasound (EUS) revealed a thickened common bile duct wall of 3.3 mm. Fine-needle aspiration of an indistinct hypoechoic pancreatic head mass showed lymphocytes with no evidence of malignancy. The IgG4 subset was elevated to 10 times the upper limit of normal. A diagnosis of IgG4 sclerosing cholangiopathy was made and the patient was commenced on prednisone therapy. There was remarkable improvement in the liver function tests and pruritus after 2 weeks of steroids. Repeat endoscopic ultrasound showed reduction in common bile duct wall thickness to 2.0 mm.

Conclusion. IgG4-associated sclerosing cholangiopathy should be considered in suspected PSC as it responds well to steroids. The use of EUS to evaluate bile duct wall thickness and for subsequent monitoring of therapeutic response is not well described and may be of value.

Geographic distribution of gastroscopy referrals to a tertiary unit: Implications for the development of an equitable endoscopy service

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Background. Gastroscopy is not yet a tertiary hospital procedure. Groote Schuur Hospital (GSH) provides 80% of the gastroscopy service for the Cape Metro West Health Area (CMWHA), with the remainder provided by Somerset Hospital (SH), G F Jooste Hospital (GFJH), and Victoria Hospital (VH). To plan a comprehensive equitable gastroscopy service, the geographical distribution of referrals needs to be mapped.

Methods. From 1 September to 31 October all gastroscopy records entered into a prospective database at the gastrointestinal unit of GSH added home location to the dataset. Locations were allocated according to the catchment areas/proximity of the 4 CMWHA hospitals – and whether patients' home locations fell within the catchment areas or not.

Results. Gastroscopies performed annually included 6 300 at GSH, 1 439 at VH, 1 141 at SH and 0 at GFJH. Of the 482 endoscopies performed during the 2-month study period, 80 had no recorded address. Sixteen per cent of the patients were not from CMWHA, while 49%, 10% and 3% should have gone to GFJH, VH and SH, respectively. Only 22% of the patients were located within GSH's true catchment area.

Conclusion. The gross inadequacy of a secondary-level gastroscopy service is highlighted. There is an urgent need to establish an endoscopy service at GFJH and to ensure that the services in the adjacent districts are responsible for their own patients.

Revisional laparoscopic surgery for failed laparoscopic Nissen fundoplication: A private practice experience

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Background. The efficacy of revisional surgery in failed laparoscopic Nissen fundoplications (LNFs) (failed due to recurrent reflux and/or new symptoms following a successful period of antireflux surgery) is promising in current literature. This is an audit of our practice.

Methods. Nine cases of revision of failed LNFs were carried out over a 3-year period at a private surgical practice and analysed by retrospective chart review. Two cases were failed redo LNFs.

Results. Symptoms before re-operation were dysphagia (n=5), heartburn (n=4) and persistent epigastric pain (n=3). Endoscopic findings included reflux oesophagitis (n=2), hiatal hernia (n=2), stenoses (n=1) and no abnormality (n=4). Barium swallows showed reflux (n=3), wrap herniation (n=1), contrast hold-up (n=1), 'cup and spill' deformity (n=1), oesophageal dysmotility (n=1) and no abnormality (n=1). Mechanisms of failure at re-operation were

cruraplasty stenosis (*n*=5), tight wrap (*n*=1), wrap herniation (*n*=1), wrap disruption (*n*=2), slipped wrap (*n*=1). Intra-operative oesophageal and stomach injuries were limited to patients with previous redo operations (*n*=2); these were repaired laparoscopically. Wraps and cruraplasties were undone only (*n*=5) in tight wraps and stenosed cruraplasties. Redo LNFs (*n*=4) were performed in slipped, herniated and disrupted wraps. Follow-up at 1, 3, and 12 months revealed overall patient satisfaction and relief of symptoms (*n*=7) with persistent dysphagia in 1 patient.

Conclusion. Revisional laparoscopic surgery is safe and offers effective symptom relief for failed LNFs. The risk of iatrogenic injury increases with subsequent redo fundoplications.

Diarrhoea in Schnitzler syndrome

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Background. Schnitzler syndrome is a rare idiopathic condition characterised by recurrent episodes of non-pruritic urticarial rash, fever, bone pain, arthralgia or arthritis, and a monoclonal gammopathy (IgM or more rarely, IgG) in concentrations <10 g/l. According to the literature, approximately 100 cases of Schnitzler syndrome have been reported to date.

Case description. We report a case of Schnitzler syndrome affecting a 54-year-old male who, in addition, had diarrhoea with his episodes of urticaria. No other cause for diarrhoea was found on further evaluation. We postulate that the diarrhoea may be caused by excess interleukin-1 activity, thought to be a primary mediator in Schnitzler syndrome. Ciprofloxacin and loratadine therapy was initiated in the patient, with good effect.

Conclusion. Diarrhoea in Schnitzler syndrome has not previously been documented. The probable role of interleukin-1 as the cause for the diarrhoea requires confirmation.

Initial experience with HROPT subtype classification of achalasia: A potential tool to predict outcome

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Background. High-resolution oesophageal pressure topography (HROPT) details pressure topography of the oesophagus, and an integrated relaxation pressure (IRP) for the lower oesophageal sphincter complex which allows subtyping. This study describes the 3 achalasia subtypes in our patient population and the early outcome of different therapies.

Methods. Over 14 months patients diagnosed with achalasia on clinical, barium swallow and endoscopy features underwent HROPT and were categorised into the 3 subtypes: I – classic achalasia, failed peristalsis; II – achalasia with compression, pan-oesophageal pressurisation; III – achalasia with rapid propagated pressurisation spasm. Treatment was at the individual clinician's discretion.

Results. Eighteen patients had primary achalasia. Average age was 42 years (range 11 - 77). The frequency of the subtypes was as follows: I – 5; II – 12; III – 1. The mean lower oesophageal sphincter pressure (LOSP) of 37 mmHg was highest in subtype II. Female patients were 3 times more common in type II. IRP increased from subtype I to III. Nine patients had pneumatic balloon dilatation (PBD), 4 had a Hellers myotomy, and 1 is awaiting surgery. Four patients were treated elsewhere. Eight have had a good initial result. Two patients had a repeat PBD. Two patients have not yet been evaluated post-operatively. One patient has not returned for clinical assessment, and 1 patient died from a PBD perforation.

Conclusion. Our early experience with HROTP clearly identifies subsets of patients with achalasia, which are indistinguishable on standard clinical and investigational grounds. There is a predominance of subtype II. Greater accrual and long-term follow-up are required to evaluate if these subtypes predict durable outcome.

HOMECOMING

You have come this far -
keep moving … don't turn back.
No one holds the measure
of their own undoing … no one,
the meaning of their dying.
Hold what lives
behind the masks
of your own making …
the music of your wild name.
Know that every tumble,
every turn on your twisting path
is a dance within a living
church of elements,
a sanctuary of stars
wings, breath and bone
where the masks of your making
are undone.

From 'Untamed'
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