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Specific Interleukin-23 Receptor Haplotype may confer protection against Crohn’s Disease while increasing risk of Spondyloarthritis.

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Objective: Clinical and genetic data suggest that both Crohn’s disease (CD) and Spondyloarthritis (SpA) originate in the gut and are different expressions of the same disease process. The Interleukin (IL)-23 pathway is crucial for the activation of Th17 cells and the ensuing inflammation seen in SpA. Moreover genome-wide association studies have demonstrated that the receptor of IL23 (IL-23R) is associated with both SpA and CD. The purpose of this study was to assess whether specific IL23R haplotypes influence disease course after initial gut inflammation.

Methods: 72 SpA patients, 997 inflammatory bowel disease (IBD) patients (n=508 CD, n=489 ulcerative colitis, UC, n=491), and 524 controls were genotyped for three IL23R single nucleotide polymorphisms (SNPs) (rs11209026, rs1343151, rs10489630) using TaqMan assays. Supporting data was imputed from the Wellcome Trust Case Control Consortium (WTCCC; 1748 CD, 2938 controls) and National Institute of Diabetes & Digestive & Kidney Diseases (NIDDK; 805 CD, 947 controls) datasets. Genotypic and haplotypic chi-square testing was performed using the software package PLINK.

Results: Haplotype rs10489630/ rs1343151 CA was found to significantly increase risk of SpA (CA: OR=1.67, 95% CI 1.14-2.45) while conferring protection against CD (CA$^{NZ}$: OR=0.76, 95% CI 0.61-0.94; CA$^{WTCCC}$: OR=0.68, 95% CI 0.58-0.79; CA$^{NIDDK}$: OR=0.68, 95% CI 0.53-0.87).

Conclusions: IL23R haplotypes may help determine whether subclinical ileocolitis ultimately manifests as CD or SpA by influencing the homing of gut-activated Th17 cells. It is possible that the CA haplotype promotes aberrant trafficking of these cells to the axial skeleton favouring development of SpA over CD.

Metachronous colorectal cancer risk for mismatch repair gene mutation carriers – the advantage of more extensive surgery

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Background: Surgical management of colon cancer in Lynch syndrome is controversial. Our aim was to compare the risks of metachronous CRC for MMR gene mutation carriers undergoing either segmental or extensive resection for their first colon cancer.

Methods: Risk of metachronous CRC was estimated for 382 MMR gene mutation carriers from the Colon Cancer Family Registry, who had surgery for their first colon cancer. Retrospective cohort analysis was used for a total of 3,545 person-years of follow-up. Age-dependent cumulative risks of metachronous CRC were calculated using the Kaplan-Meier method.

Results: None of 50 subjects who had extensive colectomy was diagnosed with metachronous CRC (incidence rate 0.0; 95%CI 0.0–7.2 per 1000 person-years). Of 332 subjects who had segmental colon resections, 74 (22%) were diagnosed with metachronous CRC (incidence rate 23.6; 95%CI 18.8–29.7 per 1000 person-years). This difference was statistically significant ($P < 0.001$). Cumulative risk of metachronous CRC was 16% (95%CI 10–25%) at 10 years and 41% (95%CI 30–52%) at 20 years after segmental colectomy for a first colon cancer. There was no statistically significant difference in the frequency of lower endoscopy after surgery between the two groups ($P = 0.2$).

Conclusions: Lynch syndrome patients with first colon cancer treated with more extensive resection have a lower risk of metachronous CRC compared with those having less extensive surgery. This finding will better inform decision making about the extent of primary surgical resection.

Acknowledgements
This abstract is presented for the Colon Cancer Family Registry and supported by the National Cancer Institute, National Institutes of Health under Request for Application #CA-95-011.
Shorter duration and lower dose of peginterferon alfa-2a therapy results in inferior HBeAg seroconversion rates compared with 48 weeks duration and 180 µg dose: NEPTUNE study

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Objective: The NEPTUNE study investigated the efficacy and safety of peginterferon alfa-2a [40KD] (PEGASYS) given for either 24 or 48 weeks and at either 90 or 180 µg weekly doses in the treatment of HBeAg-positive patients with chronic hepatitis B (CHB).

Methods: In this double-blind study, adult patients with HBeAg-positive CHB were randomised to treatment with peginterferon alfa-2a into 4 arms: either 90 or 180 µg for either 24 or 48 weeks. The primary endpoint was HBeAg seroconversion 24 weeks after the end of treatment. The primary analysis was logistic regression stratified by genotype and screening alanine aminotransferase.

Results: In total 551 patients were randomized, of which 544 patients were eligible for the per protocol population analysis. The HBeAg seroconversion rate was highest in the 48@180 group (36.2%; 47/130); HBeAg seroconversion rates for the other groups were 24@90: 14.1% (20/142); 24@180: 22.9% (32/140) and 48@90: 25.8% (34/132). There was no evidence of an interaction between duration and dose (p=0.896). Therefore, the main effects of duration and dose were analysed for the primary non-inferiority analyses (table). The OR for non-inferiority of 24 weeks vs 48 weeks was 2.17 [1.43, 3.31; p=0.749 for non-inferiority]. The OR for non-inferiority of 90 vs 180 µg was 1.79 [1.18, 2.72; p=0.410].
Conclusions: The data from NEPTUNE demonstrate that the shorter duration of 24 weeks of peginterferon alfa-2a was inferior to 48 weeks and that the lower 90 µg dose was inferior to 180 µg, for HBeAg seroconversion 24 weeks post-treatment, the study primary endpoint.

<table>
<thead>
<tr>
<th>Duration (24 versus 48 weeks)</th>
<th>Post-treatment HBeAg seroconversion rates according to duration and dose of peginterferon alfa-2a</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 weeks n=282</td>
<td>18.4%*</td>
</tr>
<tr>
<td>48 weeks n=262</td>
<td>30.9%</td>
</tr>
<tr>
<td>Dose (90 versus 180 µg)</td>
<td></td>
</tr>
<tr>
<td>90 µg n=274</td>
<td>19.7%*</td>
</tr>
<tr>
<td>180 µg n=270</td>
<td>29.3%</td>
</tr>
</tbody>
</table>

*null hypothesis of inferiority was retained

Gene-gene interaction between Macrophage Migration Inhibitory Factor (MIF) and NOD2 alters susceptibility to ileal Crohn’s Disease.

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Objectives: MIF is a pro-inflammatory cytokine implicated in the pathophysiology of IBD. Inhibition of MIF has been shown to ameliorate colitis in animal models. Preliminary evidence suggests that the promoter polymorphism \(MIF-173G>C\) (\(rs755622\)) alters susceptibility to IBD but the data is discordant regarding increased versus decreased risk. Furthermore data indicate that the strength of the association is affected by \(NOD2\) mutation status. The objective of our study was to investigate the association of \(MIF-173G>C\) with IBD, alone and in combination with \(NOD2\) status.

Methods: 479 patients with CD, 461 with UC, and 476 Caucasian controls were genotyped for \(MIF-173G>C\) and \(NOD2\) mutations, \(R702W, G908R\) and \(L1007f\). Data were analysed for single gene association and for interaction with \(NOD2\) genotype against phenotype.
Results: *MIF-173C* conferred protection against ileal CD phenotype (ileal vs. colonic disease, OR=0.66, 95%CI 0.45-0.98, p=0.037) but was not associated with overall risk of IBD, UC or CD. Logistic regression revealed evidence of gene-gene interaction between *MIF* and *NOD2* (p=0.017). In the absence of *NOD2* mutations, *MIF-173C* protected against the development of ileal CD (OR=0.57, 95%CI 0.34-0.95, p=0.031), an effect that was inverted in the presence of a *NOD2* mutation (*MIF*mut/*NOD2*mut vs. *MIF*wt/*NOD2*wt OR= 4.17, 95%CI: 2.08-8.37, p<0.0001) (*MIF*wt/*NOD2*mut vs. *MIF*wt/*NOD2*wt OR= 2.39, 95%CI 1.46-3.89, p<0.0001).

Conclusions: Whether *MIF-173C* confers protection or risk for ileal CD appears to be dependent on *NOD2* status. Discordance among previously reported *MIF-173G>C* association studies may be explained by this gene-gene interaction.

Dynamic Mechanisms of Slow Wave Propagation in the Small Intestine Evaluated by High-Resolution Mapping

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Background: Slow waves (SWs) are generated by the interstitial cells of Cajal (ICC) and coordinate intestinal motility. Motility disorders have been associated with abnormal SW activity and/or ICC dysfunction, but there remain substantial gaps in our knowledge of how SWs are organised throughout the small intestine (SI). In this study, high-resolution (HR) arrays were sequentially applied over the SI to define normal SW propagation dynamics in improved spatiotemporal detail.

Methods: In-vivo HR serosal mapping was performed in five anesthetised weaner pigs using customized flexible printed-circuit-board (PCB) platforms (256 electrodes; 4mm spacing, ~35cm²). Silicone cradles were used to maintain PCB contact over the curvature of the SI. The electrode arrays were applied at representative intervals from the proximal duodenum to the terminal ileum. New automated analysis methods were developed to characterise the spatiotemporal details of SW propagation, frequency, and amplitude.

Results: Spatiotemporal mapping revealed instances of SWs propagating beyond the length of the array (12.4cm) in both the oral and aboral direction. Distal pacemaker location and activity were observed to be dynamic and variable. A decreasing trend of porcine SW frequency and amplitude was shown from the duodenum (17.5±0.6cpm; 0.11±0.02mV) to the mid-jejunum (15.1±0.8cpm; 0.04±0.01mV) and the terminal ileum (9.7±0.5cpm; 0.04±0.01mV).

Conclusions: New methods have been validated for in-vivo HR mapping. Spatiotemporal analysis shows variable, dynamic SW propagation patterns. Further studies using these methods will enable a detailed analysis of the mechanisms of SI
SW propagation, improving clinical understanding of SI function in health and dysmotility.

**Aberrant Initiation and Conduction of Slow Wave Activity in Diabetic Gastroparesis**

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**Background:** Abnormal slow wave (SW) activity is thought to contribute to gastroparesis. However, the clinical significance of abnormal SW activity in gastroparesis remains uncertain because traditional recording methods (electrogastrography (EGG) / sparse-electrodes) provided insufficient detail. We aim to define gastroparetic SW initiation and conduction abnormalities in accurate spatiotemporal detail.

**Methods:** A pilot study was performed on 6 patients with diabetic gastroparesis undergoing gastric stimulator implantation (mean ‘total symptom score’ 16±2/20; mean 4hr gastric retention 29±8%). High-resolution (HR) gastric electrical mapping was performed intra-operatively over the anterior serosal surface using validated multi-electrode arrays (256 electrodes; 4mm spacing)\(^1\). Propagation patterns were spatiotemporally mapped and SW characteristics defined.

**Results:** SW amplitudes were low (mean 0.21mV vs 0.28mV in controls\(^2\); \(p=0.01\)). A range of novel and abnormal propagation patterns were observed in most patients (5/6), including aberrant velocity profiles (5/6), stable conduction blocks (2/6), ectopic pacemakers (4/6), retrograde propagation (2/6) and colliding wavefronts (2/6). SW frequencies were ‘normal’ in 4/6 (cohort range: 2.7-4.2cpm).

**Conclusions:** Marked abnormalities of slow wave initiation and conduction were revealed by HR electrical mapping in 5/6 patients with severe diabetic gastroparesis. SW amplitudes were found to be low, and several dysrhythmic mechanisms were observed for the first time. These abnormalities were spatially complex and often occurred at normal frequency, meaning they may go undetected by less sophisticated tests such as EGG. These results must be confirmed and extended over a larger cohort before the clinical implications are understood.


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Mortality of Autoimmune Liver Diseases in Canterbury, New Zealand: A Population-Based Study

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Background/Aim: Autoimmune hepatitis (AIH), primary biliary cirrhosis (PBC), and primary sclerosing cholangitis (PSC) are progressive chronic autoimmune liver diseases (ALD) that lead to cirrhosis and liver failure. These conditions are also associated with hepatic and extra-hepatic carcinoma. However, quantitative information on mortality of ALD is unknown. We aim to perform mortality analysis on population-based cohorts of ALD in Canterbury, New Zealand.

Methods: In order to capture all cases of ALD in Canterbury, all private and public gastroenterology clinic notes, inpatient discharge codes, laboratory, pathology and radiology reports were searched. Cases that fulfil validated diagnostic criteria were included into the study. Details of follow up and death were recorded. Kaplan-Meier curves were used to present survival data. Standardised mortality ratios (SMR) for these conditions were calculated. Expected death rates were calculated using Canterbury population life-table information provided by Statistic New Zealand.

Results: A total of 138 AIH, 70 PBC and 81 PSC patients were included. Kaplan-Meier estimate of the risk of death at 15 years were 26% for AIH, 42% for PBC and 51% for PSC. SMRs were calculated as 2.0 (95% CI 1.3-2.9) for AIH, 2.6 (95% CI 1.7-3.9) for PBC and 4.5 (95% CI 2.9-6.7) for PSC.

Conclusion: This is the first report of SMRs for AIH, PBC and PSC. It shows that the mortality rates for patients with these conditions are significantly higher in comparison to the general population despite the availability of effective treatment for AIH and the option of liver transplantation.

Survey of Autoimmune Hepatitis Management in New Zealand

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Background/Aim: Treatment for autoimmune hepatitis (AIH) comprises immunosuppressive therapy, including corticosteroids alone or in combination with azathioprine. However, there is no consensus on management algorithm of AIH and it differs broadly between centres worldwide. We aim to document the pattern of practice in AIH management in New Zealand.
Methods: A survey form with twenty-nine multiple choice questions was constructed using Survey Gizmo version 2.6, an online survey builder. The form was placed online at web address http://www.surveygizmo.com/s/268818/autoimmune-hepatitis-management-survey-nz-. Invitation to participate was sent via email by the New Zealand Society of Gastroenterology to all Gastroenterologists in New Zealand. Significant majority was defined as significantly greater than 50% of respondents agreed on an answer to the question of interest based on 95% confidence interval.

Results: There were 47 respondents. Significant majority preferred prednisone 40mg od as first line treatment and Azathioprine as steroid sparing agent, would screen for hepatocellular carcinoma in AIH patients with cirrhosis, would not use Immunoglobulin G and smooth muscle antibodies level to monitor disease activity and would consider osteoporosis prophylaxis. However, there was no consensus on when Azathioprine should be initiated, the target dose of Azathioprine, duration of steroid and Azathioprine treatment, and the utility of thiopurine metabolites in AIH management. Significant majority believed that a local AIH management guideline is needed.

Conclusion: Although Azathioprine is the preferred steroid sparing agent in AIH treatment, there is great diversity in its administration among Gastroenterologists in New Zealand.

Balloon dilatation in achalasia is effective and safe; a 13-year single centre experience

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Introduction: Oesophageal balloon dilatation is a recommended treatment, alongside surgical myotomy and botulinum toxin injection, for idiopathic achalasia. We aimed to assess the outcome of balloon dilatation and the risk of serious complications defined as perforation or death, in a single centre series.

Methods: In this retrospective study, patients that had balloon dilatation for achalasia were identified from the Endoscribe database at Christchurch Hospital from 1997 through to 2010. This captured all such procedures performed in Christchurch. Clinical follow-up data was obtained from electronic and paper case notes.

Results: 116 balloon dilatations were performed in 76 patients from 1997 to 2010 (63% females, mean age 60 yr and 37% males, mean age 57 yr). 115 had balloon dilatation to 30mm diameter initially, and subsequently to 35 or 40mm if required. 38% required a second dilatation after a mean of 13.7 months, 13% a third dilatation after 13.6 months and 1.3% a fourth dilatation after 11.3 months. A single perforation (0.86%) and no deaths occurred. 5 patients (6.6%) underwent subsequent surgical myotomy following balloon dilatation including the one patient with oesophageal perforation, who had a good outcome.
Conclusion: Balloon dilatation was a safe and effective treatment for achalasia, with a single treatment resulting in satisfactory outcome in >60% of patients, and subsequent surgery in only 6.6%. Serious complications occurred in less than 1% of procedures and no deaths.

Hydrogen Breath testing to selectively modify a low “Fodmap” Diet, significantly improves functional bowel symptoms

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Aim: The association between high “FODMAP” (rapidly fermentable short chain carbohydrates) diets and functional bowel symptoms is now recognised. The use of hydrogen breath testing to identify malabsorption of key FODMAP components and then selectively modify the diet is an emerging approach. We evaluate the efficacy of this technique in a prospective cohort study.

Methods: A consecutive series of patients evaluated for functional gastrointestinal symptoms underwent hydrogen breath testing by the following protocol: Low fermentation diet for 24 hours followed by a baseline breath test. Subsequently, 15mls lactulose (control) was ingested, after which breath samples were analysed every 15 minutes for up to 3 hours. The protocol was repeated with 30g fructose and 50g lactose respectively on 2 subsequent days. Based on these results a selectively modified low FODMAP diet was instituted by a dietician. Symptom improvement was assessed by clinic review at 6 weeks, and self-assessed questionnaire at 6 months.

Results: The first eligible 100 patients have been analysed. 92 underwent hydrogen breath testing. 73 (79%) had evidence of fructose or lactose malabsorption commenced a FODMAP reduced diet. 19 (21%) had no evidence of either malabsorption therefore no specific dietary change was advised. To date, results are available for 58 of the 73 patients at 6 weeks. 55/58 (95%) had an improvement in symptoms (62% significant, 33% partial).

Conclusion: A selectively modified low FODMAP diet, based on results of hydrogen breath testing, is associated with an improvement in functional bowel symptoms in the majority of patients after 6 weeks.

Can we rely on Transient Elastography? An analysis of the first 1000 cases performed by the New Zealand Liver Transplant Unit

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Aim: Transient elastography (FibroScan™) is an attractive non-invasive assessment of liver fibrosis, but appropriate use is important to obtain a clinically meaningful result. It is best validated for discriminating cirrhosis (F4) from ≤F3, and in patients
with chronic viral hepatitis (1). Criteria for reliability of the result have recently been established (2). In this audit we evaluate the reliability and validity of the first 1000 FibroScans performed by the NZ Liver Transplant Unit according to these defined criteria.

**Methods:** Consecutive FibroScans (June 2009 to August 2010) were retrospectively assessed for reliability, defined as (i) at least 10 valid shots and (ii) success rate > 60% and (iii) interquartile range(IQR)/median <30%) . Subgroup analyses were performed in patients with HCV (value of >12.5kPa equivalent to cirrhosis), HBV and non-viral aetiology.

**Results:** 1000 FibroScan™ procedures were performed, 50% for HCV, 36% for HBV, 7% for NAFLD, 2% ALD, 5% other. In 2.7% of cases, no result could be obtained. In the total population, 8.3% had <10 valid shots, 10.4% had <60% success rate, and 18.2% had IQR/median > 30%. Overall 74.4% met criteria for reliability. The reliability was similar amongst the 3 subgroups - HCV (76.7%), HBV (72.5%, p value = 0.38 vs. HCV) and non-viral 71.9% (p value 0.19 vs. HCV). Of the HCV group, 17.6% had cirrhosis.

**Conclusion:** Transient elastography is a useful test when referred appropriately. However in 1/4 of cases the result may be unreliable and in a small percentage, no result can be obtained.

**References:**

**Risk factors for thrombosis in a 5-year cohort of patients receiving intravenous nutrition at North Shore Hospital**

Departments of Gastroenterology*, Pharmacy# & Nutrition^, North Shore Hospital, Auckland, New Zealand

**Background:** Venous thrombosis is a common complication of patients receiving Intravenous Nutrition (IVN), at ~2 cases/1000 days of IVN.

**Aim:** To assess the significance of potential risk factors for predicting venous thrombosis in patients receiving IVN.

**Methods:** Retrospective analysis of a prospectively collected 5 year database of all patients receiving IVN at North Shore Hospital from 2005 - 2010.
Demographic data, comorbidity, and presence of potential thrombotic risk factors were collected and analysed for statistical significance.

**Results:** 360 patients on the database, with data available on 388 IVN episodes for a total of 5670 days, median duration 10 days, (range 1-457). Mean age 64.2 years (range 16-93), 173 male. 11 patients developed venous thrombosis (median age 55.7, 5 male).

The odds ratios of the most important risk factors for venous thrombosis in IVN patients were:

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Thrombosis</th>
<th>No Thrombosis</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of patients</td>
<td>No. of patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malignancy</td>
<td>Cancer in last year</td>
<td>5</td>
<td>42</td>
<td>6.09</td>
</tr>
<tr>
<td></td>
<td>No recent cancer</td>
<td>6</td>
<td>307</td>
<td>p-value 0.008</td>
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<td>Surgery</td>
<td>During current admission</td>
<td>7</td>
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<td></td>
<td>No recent surgery</td>
<td>4</td>
<td>247</td>
<td>p-value 0.021</td>
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<td>p-value 0.255</td>
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<td>CVL line</td>
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<tr>
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<td>BMI &lt;30</td>
<td>8</td>
<td>292</td>
<td>p-value 0.402</td>
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</table>

**Conclusion:** Using univariate analysis, malignancy and surgery were the only statistically significant risk factors identified for venous thrombosis. However,
multivariate analysis identified important compounding risk factors that can be modified for patients receiving IVN.

The Effect of Metoclopramide on Gastric and Small Bowel Transit Time as Measured by Capsule Endoscopy

Ow M, Casey P, Patrick A. Department of Gastroenterology, Middlemore Hospital, Auckland.

Introduction: Metoclopramide is used in clinical practice to promote gastrointestinal motility. There is literature to support its action on gastric emptying, but only a handful of human studies looking at its effect on small intestinal motility. This is a prospective, single-blind, randomised, controlled trial examining the effect of metoclopramide on transit times using capsule endoscopy (CE).

Methods: Patients referred for CE between 2008 and 2010 were randomised to no metoclopramide, or 10mg metoclopramide before procedure. Patients with previous gastric/small bowel surgery were excluded. Baseline data included demographics, medical and surgical history. The two reporting gastroenterologists were blinded. Primary outcomes were gastric transit time (GTT) and small bowel transit time (SBTT). Secondary outcomes were completion rate of CE and diagnostic yield.

Results: 59 patients were randomised: 33 received metoclopramide, 26 did not. There were 28 males and 31 females; median age was 59yrs. The most common indication was iron deficiency. Baseline data were similar between the two groups. GTTs were significantly shorter with metoclopramide (median 15mins, vs. median 29mins in non-metoclopramide group; p=0.01). SBTTs of complete procedures were similar between the two groups (median 180mins metoclopramide group, vs. median 202mins non-metoclopramide group; p=0.43). There was a higher completion rate with metoclopramide, (97% metoclopramide group vs. 88% non-metoclopramide group), but was not statistically significant (p=0.31). The diagnostic yield in the metoclopramide group was 44%, vs. 39% in the non-metoclopramide group (p=0.79).

Conclusion: Metoclopramide reduced gastric transit time, confirming its action on gastric emptying. However, it had no effect on small bowel transit time and thus did not accelerate small intestinal motility. The completion rate and diagnostic yield were not affected by metoclopramide. There is no indication to recommend routine use of metoclopramide prior to capsule endoscopy.

Risk of Reactivation in Patients with Current and Past Hepatitis B Infection Treated with Rituximab-Based Chemotherapy

Ow M(1), Gane E(1,2). (1)Department of Gastroenterology, Middlemore Hospital, Auckland (2)NZ Liver Transplant Unit, Auckland City Hospital, Auckland
**Introduction:** HBV reactivation may occur in both HBsAg positive and HBsAg negative/anti-HBcore positive individuals receiving chemotherapy. This retrospective analysis examined the risk of reactivation in patients with current/previous HBV treated with Rituximab-based chemotherapy.

**Methods:** All patients who received Rituximab-based chemotherapy for haematological malignancies at Middlemore and Auckland City Hospitals from 2005-2010 were analysed. Baseline HBV status was recorded as either naïve (HBsAg neg/anti-HBcore neg), current (HBsAg+), or previous HBV infection (HBsAg neg/anti-HBcore+). Serial HBsAg, HBVDNA, and ALT were recorded. Use of prophylactic Lamivudine was noted. Primary outcome was rate of HBV reactivation (defined as HBsAg+, HBV DNA >5log_{10} IU/mL and ALT>ULN).

**Results:** 501 patients received Rituximab, of whom 10 (2%) had active HBV (HBsAg+) and 72 (17%) had previous HBV infection (HBsAg neg/anti-HBcore+). All 10 HBsAg positive patients received Lamivudine pre-chemotherapy. 1 patient (10%) reactivated after Lamivudine cessation 6 months post-chemotherapy, despite low pre-treatment HBVDNA. Monitoring was performed in 45 patients with previous HBV. None of the 28 who received Lamivudine reactivated, compared to 2/17 who did not receive Lamivudine (p=0.06). All patients who reactivated received R-CHOP and were rescued with antiviral therapy.

**Conclusion:** In HBsAg positive patients who receive Rituximab, delayed reactivation may occur despite Lamivudine prophylaxis and low pre-treatment viral load. Careful monitoring post-Lamivudine cessation is imperative in this group. In patients with previous HBV, reactivation is prevented by Lamivudine prophylaxis. In patients with current or previous HBV receiving R-CHOP, Lamivudine prophylaxis should be continued at least 6 months after last dose of Rituximab and should be followed by serial monitoring of HBsAg/ALT for a further 3 months.

**Weight loss in private and public laparoscopic gastric roux-en y gastric bypass with silastic ring: How do they compare?**

**Puckett, J, Booth, M**  
Department of General Surgery, North Shore Hospital, Auckland, New Zealand.

**Background.** The aim of this study was to compare weight loss one year after laparoscopic Roux-en-Y gastric bypass with silastic ring (LRYGB) between private and public sectors.

**Methods.** Patients who underwent LRYGB by one surgeon, in both a public and private hospital were retrospectively identified. Patients operated on between 2001 and 2009 were analysed. Demographics, comorbidities, and pre and post-operative weight, height and BMI were collected from both private and public medical record databases. Exclusion criteria were applied. Patients were then matched from the private to the public sector according to: sex, age +/- two years, BMI +/-4 followed by...
closest comparison of co-morbidities. One year follow up weights and BMIs were then compared between the matched pairs. Data was analysed using parametric test for paired data.

**Results.** In the final analysis, 59 patients were included in each group. Public and private patients were well matched for preoperative BMI (46.71 vs. 45.72, p>0.05). There was a significant reduction in BMI postoperatively for both the public (16.42, p<0.001) and private (18.67, p<0.001) patients. The mean BMI loss in public patients was significantly less than in private patients (p<0.001).

**Conclusion.** Private patients have greater weight loss in the first year following LRYGB compared to the public sector. Further research is indicated to identify the factors contributing to this difference.

**Assessing the practical use of scoring systems to evaluate overt Upper Gastrointestinal Bleed (UGIB) outcomes, across the Auckland region**

**Dr Tibbatts C, Dr Raj A, Dr Johns E, Dr Rowbotham D, Dr Casey P, Dr Perry J**

**Auckland, Middlemore & North Shore Hospitals**

**Aim:** To compare the efficacy of the Rockall (RS) and Glasgow Blatchford (GBS) Scoring Systems, at predicting mortality, rebleeding and need for intervention at endoscopy in patients presenting with UGIB within the Auckland region.

**Method:** All patients presenting with UGIB to Auckland, Middlemore or North Shore Hospitals between 01/12/09-01/08/10, were prospectively identified via referrals to the gastroenterology departments. Data was then collected from clinical assessments, paper and computer records. The RS & GBS was calculated for each patient and they were followed for a period of 3-9 months. The primary endpoints were death or rebleeding. The secondary endpoint was need for intervention at endoscopy.

**Results:** 602 patients with overt UGIBs, were identified. 67.3% were male, with an age range from 21-92 years old (mean 67). 9.9% had known malignancies and 3% had cirrhosis. The length of stay in hospital varied from 1-32 days, with a mean of 3 days. 82.2% were haemodynamically stable on arrival. 18.8% of patients required intervention at endoscopy with 92% of these patients having a GBS of >4, while the RS had no significant predictive value. The overall mortality was 7.9%, with all the patients who died having a post-endoscopy RS >3. 4% of these died as inpatients, (but only 2% from their bleeding), with the others dying of unrelated co-morbidities. The rebleeding rate was 14.9% (5% as inpatients), where again all the patients had a post-endoscopy RS >3.
Conclusion: The GBS appears to be useful in predicting patients that require intervention at endoscopy, while the post-endoscopy RCS is helpful with predicting mortality.

Continued Efficacy, Safety and Resistance Through 4 Years of Tenofovir Disoproxil Fumarate (TDF) Treatment in HBeAg Positive and Negative Patients with Chronic Hepatitis B; Preliminary Analysis

Authors: Gane E¹, Weilert F², Moyes C³, Stace N⁴, Heathcote, EJ⁵, Marcellin P⁶, Snow-Lampart A⁷, Chappell B⁷, Borroto-Esoda K⁷, Coombes DH⁷, Mondou E⁷ and Anderson J⁷.

Affiliations: ¹Middlemore Hospital, Auckland; ²Waikato Hospital, Hamilton; ³Hepatitis Foundation, Whakatane; ⁴Wellington Hospital, Wellington; ⁵University of Toronto, Ontario Canada; ⁶Hôpital Beaujon, Clichy, France; ⁷Gilead Sciences, Durham NC, USA.

Background: Tenofovir disoproxil fumarate (TDF) is a nucleotide analog first approved for HIV-1 in 2001 and chronic hepatitis B (CHB) in 2008.

Methods: Subjects from study 102 (HBeAg-) and 103 (HBeAg+) were randomized 2:1 to receive 48 weeks of TDF or adefovir dipivoxil (ADV) then open-label TDF for up to an additional 7 years. Subjects with HBV DNA >400 c/mL on/after WK72 had the option to add emtricitabine (FTC) to TDF. Sequencing of HBV pol/RT was attempted at baseline for all subjects and WK 192/time of discontinuation or FTC addition if HBV DNA ≥400 c/mL. Virologic breakthrough was defined as confirmed HBV DNA >1 log₁₀ from nadir or HBV DNA ≥400 c/mL after <400 c/mL.

Results: Overall, 77% HBeAg positive and 86% HBeAg negative patients had HBV DNA <400 c/mL, ITT analysis. Antiviral efficacy was similar in Asian and non-Asians and >95% of patients on treatment with a baseline viral load ≥ 9 log₁₀ copies/mL achieved HBV DNA <400c/mL. In study 103, HBeAg loss/seroconversion was observed in 41%/31% of patients (on treatment analysis), and cumulatively 10%/7.5% of patients had HBsAg loss/seroconversion (Kaplan Meier). Safety through year 4 was good and creatinine levels remained stable. No amino acid substitutions associated with TDF resistance developed with up to 4 years of TDF monotherapy and <1% of patients had virologic breakthrough in Year 4.

Conclusion: TDF was well tolerated and produced potent, continuous viral suppression with increasing HBeAg and HBsAg loss through 4 years of treatment. No resistance to TDF was observed.
Efficacy of Tenofovir Disoproxil Fumarate (TDF) Treatment in Patients with a Suboptimal Response to Adefovir Dipivoxil (ADV)

Authors: Gane E¹, Weilert F², Moyes C³, Stace N⁴, Heathcote, EJ⁵, Marcellin P⁶, Berg T⁷, Anderson J⁸; Sorbel J⁸, Frederick D⁸, Rousseau F⁸, Borroto-Esoda K⁸ and Manns M⁹.

Affiliations: ¹Middlemore Hospital, Auckland; ²Waikato Hospital, Hamilton; ³Hepatitis Foundation, Whakatane; ⁴Wellington Hospital, Wellington; ⁵University of Toronto, Ontario Canada; ⁶Hôpital Beaujon, Clichy, France; ⁷Medizinische Klinik mit Schwerpunkt Hepatologie und Gastroenterologie, Berlin, Germany; ⁸Gilead Sciences, Durham NC, USA; ⁹Medizinische Hochshule, Hannover, Germany.

Background: In vitro, different patterns of adefovir-associated resistance mutations have varying degrees of sensitivity to TDF. This analysis evaluates the efficacy of TDF in patients with suboptimal response (HBV DNA >400 copies (c)/mL) on adefovir dipivoxil (ADV).

Methods: 160 HBeAg+ and HBeAg- patients with persistent viral replication after 24-96 weeks of ADV therapy were treated with TDF for up to 96 weeks in studies 0102, 0103, and 0106; 23% had prior lamivudine (LAM) experience. HBV DNA, HBsAg, HBeAg and ALT were monitored; population sequencing of HBV polymerase was conducted at baseline and for patients with HBV DNA >400 c/mL at week 96/last on treatment. An ITT analysis was conducted using non-completers=failures. Patients with confirmed HBV DNA ≥400 c/mL could add emtricitabine (FTC) and were considered failures after FTC addition.

Results: After 24 weeks of TDF monotherapy, 77% of patients had HBV DNA < 400 c/mL and 59% had normal ALT. This response was maintained through 96 weeks. Similar results were observed in patients with LAM-resistance (n=7) and ADV-resistance (n=10) mutations at baseline. Among the 101 HBeAg+ patients, 15%/10% achieved HBeAg loss/seroconversion and by Kaplan-Meier estimation HBsAg loss/seroconversion was achieved in 4.5%/3.2% over 96 weeks. The safety and tolerability profile of TDF was good and no amino acid substitutions associated with TDF resistance developed through 96 weeks.

Conclusion: The majority of patients had complete viral suppression following up to 96 weeks of TDF monotherapy despite prior incomplete response on ADV. No resistance to TDF was observed.

Do beta-blockers reduce energy expenditure in patients with liver cirrhosis?

Authors: Lee W, Plank L, Gane E, McCall J.
**Background:** Liver cirrhosis is associated with nutritional abnormalities including protein malnutrition and raised resting energy expenditure (REE). We previously showed that elevated REE, even within the normal range, was associated with reduced transplant-free survival in liver cirrhosis. Non-selective β-blockers reduce portal hypertension and prevent variceal bleeding but also reduce REE in acute hypermetabolic conditions such as burns and sepsis. We conducted a double-blind randomised controlled cross-over trial to investigate if non-selective β-blockers reduce REE in patients with liver cirrhosis.

**Methods:** Twenty-two stable cirrhotic patients (16 male, 6 female, age range 45 – 75 years) not previously on β-blockers had measurements of REE and body composition before and after 3 months of treatment with nadolol or placebo, then crossed over to the alternative treatment after a 1 month washout period.

**Results:** Mean (SEM) REE at recruitment was 1612 (54) kcal/day. Following placebo REE decreased by 42 (31) kcal/day (p=0.18) compared to a reduction of 124 (30) kcal/day (p=0.0005) with nadolol (p=0.071 for group comparison). Body composition changes were not significant. There was no evidence of a treatment-period interaction. There was no difference in adverse events between the groups (6 nadolol vs 2 placebo, p=0.29).

**Conclusions:** Oral β-blockers reduced REE in stable cirrhotic patients and may have benefits over and above those related to prophylaxis against variceal haemorrhage.

**Transjugular Intrahepatic Portosystemic Shunts (TIPSS) – Auckland Hospital Experience**

JC Hsiang, AH Holden, EJ Gane  
NZLTU and Radiology Department, Auckland Hospital

A retrospective analysis was performed on efficacy and clinical outcome of all TIPSS procedures performed at Auckland Hospital. The clinical records on all patients who underwent TIPS at Auckland Hospital between 1996 and 2010 were reviewed. Clinical indices included in this analysis were aetiology and severity of liver disease, TIPSS indication, pre- and post-procedure serum creatinine, recurrence of gastrointestinal (GI) bleeding, ascites, stent patency rates, procedural complication and survival rates.

88 TIPS procedures were attempted in 81 patients. Indication for TIPSS was refractory ascites in 36 (41.9%), variceal bleeding in 24 (27.9%), hydrothorax in 8 (8.1%), hepatopulmonary syndrome in 2 (2.3%), acute Budd Chiari syndrome in 1 (1.2%) and hypersplenism in 4. 39.5% of the cases subsequently underwent liver transplantation. Perioperative blood transfusion requirements were not reduced in patients with pretransplant TIPSS. Procedure failure rate was 8.3%. Primary patency was 63%, 56% and 25% at 3, 6 and 12months respectively. Secondary assisted patency was 100% at 3, 6 and 12months. Mean serum creatinine improved following TIPS (p=0.001). No procedure-related mortality occurred. Cumulative mortality was 20% at 1 year and 8% at 5 years. Eleven patients (12.5%) developed hepatic encephalopathy, 1 died from coma, 7 treated and responded to bowel cares. All TIPSS patients awaiting transplantation survived to transplant. Mean time to transplantation after TIPSS was
168 days. Expanded polytetrafluoroethylene covered stents were used in 45 patients, 33 of these placed after 2006.
Successful TIPS improves all complications of portal hypertension and may facilitate management of patients on the waiting list for transplantation. Hepatic encephalopathy is uncommon and long-term patency satisfactory with current surveillance protocols.

Long-Term Outcome of Short Uncomplicated Crohn’s-Related Strictures Treated by Endoscopic Balloon Dilatation vs. Surgery

Ow M. Department of Gastroenterology, Middlemore Hospital, Auckland.

Introduction: Crohn’s-related strictures can be managed with surgery or endoscopic balloon dilatation (BD). There is a lack of data comparing these techniques. This retrospective study examines the long-term outcome of Crohn’s-related strictures treated by BD vs. surgery.

Methods: Crohn’s patients from Middlemore and Auckland City Hospitals with a ≤5cm uncomplicated stricture treated from 2001-2005 were analysed. Patients were excluded if they had other surgical indications. Primary outcome was long-term efficacy, defined as proportion of patients not requiring further dilatation/surgery after initial intervention.

Results: There were 26 patients in the Dilatation (D) group and 31 in the Surgery (S) group. Median age was 35 years (group D) and 39 years (group S). Results on sex, disease duration, and baseline immunosuppression were similar in both groups. Majority were ileal/ileocolonic strictures. Group D had a greater number of anastomotic strictures (21/26), compared with group S (16/31) (p<0.05). Median follow-up was 7.7 years.
In group D, after initial dilatation, 35% remained dilatation-free and surgery-free until end of follow-up. In group S, after initial surgery, 80% remained dilatation-free and surgery-free until end of follow-up (p<0.01).
In group D, 62% required further dilatation (mean 3 dilatations) and 23% required surgery. Group D had 2 perforations and group S had 1 anastomotic leak. There were no treatment-related deaths. CRP did not predict risk of recurrence. There was a non-significant trend towards better primary outcome in those on Azathioprine.

Conclusion: The surgical group had better long-term efficacy when compared to a single dilatation. There was a preference for dilatation in anastomotic strictures. 77% of patients in the dilatation group avoided surgery, requiring an average of 3 dilatations. There were no predictors of recurrence. This study confirms that surgery is the most effective treatment, although endoscopic dilatation remains a safe, bowel-conserving, non-surgical alternative.
Advanced tumour stages do not correlate with therapeutic delay in colonic cancer

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Non-specific symptoms often precede a diagnosis of colon cancer and lead to diagnostic and therapeutic delays. It is unclear whether these delays impact on the final stage of the cancer.

Retrospectively, all patients first presenting to Dunedin Hospital with colon cancer between October 2007 and September 2009 were included. Patients who received investigations or treatment in private were excluded. Total Therapeutic Delay (TTD – from onset of symptoms to definite treatment), Hospital Delay (HD – from GP referral to definite treatment) and Investigative Delay (ID – from first specialist appointment (FSA) to definite treatment) were retrospectively assessed. TNM tumour stage was determined from histology reports, CT/MRI reports and operation notes. Patients were stratified as having either Early Cancer (EC – T1-3, N0, M0) or Advanced Cancer (AC – T4, N0, M0; Tx, N1-2, Mx; Tx, Nx, M1).

203 patients were identified; 63 with EC and 123 with AC. There were no significant differences in demographics. No significant difference was seen between EC and AC in the TTD, HD or ID. The length between onset of symptoms to GP referral was not significantly different. Components of the HD did not differ. Prior to initial FSA, 31.4\% of AC patients presented acutely compared to 7.9\% EC patients. Most acute first presentations resulted in emergency surgery (86.3\% for AC and 75.9\% for EC).

The observed TTD in this hospital is long, it does not correlate with advanced tumour stage. Health resources need to be directed towards screening program of asymptomatic patients.

Validation of a short quality of life questionnaire in Inflammatory Bowel Disease

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IBD has a significant impact on the Quality of Life (QOL). Biochemical or endoscopic markers not always reflect this and questionnaires are not suited to use in routine clinical practice.

Patients attended for examination, blood and stool tests and completed the IBDQ and DISQ. The DISQ grades the severity of 15 bowel symptoms (0-4), the IBDQ contains 32 questions. Patients provided a stool sample for faecal calprotectin and a blood sample for haemoglobin. CD patients also completed a Crohn’s Disease Activity Index (CDAI). Results were analysed using the Spearman’s correlation coefficient.

From 09/2009 to 01/2010 54 patients (CD: n=30; UC: n=24) were recruited. Demographics were comparable. In CD, the DISQ correlated with all components of the IBDQ (bowel systems, BS; r=-0.793, p<0.001; systemic systems, SS; r=-0.545, p=0.003; emotion health, EH; r=-0.617, p<0.001; social function (SF; r=-0.581, p=0.001) and the CDAI (r=-0.596, p<0.001). Similar correlations were found in UC with BS (r=-0.625, p=0.001), SS (r=-0.608, p=0.002), EH (r=-0.722, p<0.001), SF (r=-0.688, p<0.001). Faecal calprotectin did not correlate with the DISQ or IBDQ in UC or CD and CDAI in CD. 3 components of the IBDQ (not SS) correlated with the CDAI (p<0.01). A DISQ score of <12 correlated with fewer sick days.

The DISQ is comparable to the established IBDQ in both CD and UC and correlated well with the CDAI in CD. The DISQ is easier to administer and can therefore be used as a daily clinical tool to assess disease activity. Faecal calprotectin does not correlate with clinical symptoms and QoL in IBD.

Paracetamol overdose: Determinants of outcome from a single centre, 10 year experience.

Lim TH, Gane E, Orr DW. NZ Liver Transplant Unit, Auckland City Hospital.

Background: Paracetamol overdose is a leading cause of morbidity and mortality in western countries. Prompt treatment with acetylcysteine can avert significant hepatic injury following paracetamol overdose.

Aim: To evaluate the demographic and laboratory characteristics of patients with paracetamol overdose at Auckland City Hospital and identify risk factors for severe hepatotoxicity and outcome.

Method: Patients with a diagnosis paracetamol overdose between 1st August 2000 to 31st July 2010 at Auckland Hospital were identified. Primary outcome is significant hepatotoxicity (peak serum AST or ALT level >1000U/L). Secondary outcomes are death or referral for liver transplant. 1731 patients were identified of whom 1419 (82%) were intentional overdose, 312 (18%) were accidental overdose. 65/1419 (4.6%) of the intentional group developed a
severe hepatitis, compared to 31/312 (10%) of the accidental group (p=0.003). Peak INR, transaminases and inpatient stay were all significantly higher in the accidental overdose group.

3/266 (0.3%) of those treated within 12 hours of ingestion vs 41/133 (31%) for those treated more than 12 hours had INR >2; (p<0.0001). Hepatotoxicity is also more common in patients >40 years old: 16.5% vs 6.3% (p=0.002)

Only 1 patient with peak transaminases <1000U/L developed an INR >2.0 or had evidence of liver failure.

Conclusions: Accidental overdose, a delay of >12 hours from paracetamol overdose and receiving N-acetylcysteine; and age >40 years are significant risk factors for severe hepatitis and progression to liver failure.

All patients who present with a history of significant paracetamol overdose should be commenced on N-acetylcysteine without delay, with close monitoring of INR and renal function. Patients with an INR >2.0 should be discussed with the liver transplant unit.

Extended colonic resection does not impair quality of life in individuals with familial bowel cancer or polyps


Introduction: Postoperative quality of life (QoL) is an important consideration when deciding on the extent of colonic resection for treatment of colorectal cancer (CRC) or polyps in individuals with HNPCC (Hereditary Non Polyposis Colorectal Cancer) or Hyperplastic Polyposis (HPS). The aim of this study was to compare the QoL reported after segmental or extended colonic resection.

Methods: QoL was assessed with the disease specific European Organization for Research and treatment of Cancer (EORTC) QLQ-C30 and CR-38 questionnaires. Ethics approval was obtained. The questionnaire was mailed to patients identified from the New Zealand Familial Gastrointestinal Cancer Registry database who had HNPCC or HPS, and prophylactic or CRC surgery from 1990 to 2009. Answers were grouped according to the EORTC guidelines: seven functional scales, ten symptomatic scales, one global health status and quality of life scale and ten single item measures.

Results: Of 168 patients identified, 80 (46 female, mean age 63 years) following segmental and 36 (22 female, mean age 69 years) following extended resection returned the completed questionnaire (69.0%). The global health status and the functional scales between the patient groups were the same (p>0.05). A significant difference was seen in two of the symptomatic scales, patients who had undergone extended resections experienced less constipation (p=0.015) but increased problems with diarrhoea (p=0.001).

Conclusion: Although extended colonic resection for familial bowel cancer syndromes is associated with more diarrhoea, this does not appear to impair QoL. This finding if confirmed in larger studies will help inform surgical decision making in these patients.
Perioperative immunonutrition in liver transplantation: results of a double-blind randomized controlled trial

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Preliminary work suggested that perioperative immunonutrition (IMN) enriched in n-3 fatty acids, arginine and nucleotides (IMPACT®, Nestle) may improve preoperative nutritional status, enhance postoperative recovery and reduce postoperative infectious complications in patients undergoing liver transplantation (LT). The current study examined these outcomes in a double-blind, randomized, controlled trial. 120 patients wait-listed for LT were randomized to supplemental (0.6L/d) oral IMN (n=61) or an isonitrogenous, isocaloric control (CON, n=59). Enteral IMN or CON was commenced usually within 12 hours of surgery by nasojejunal tube and continued for at least 5 d. Total body protein (TBP) was measured by neutron activation at study entry, immediately prior to LT and 10, 30, 90, 180 and 360 d post-LT. Infectious complications were recorded for the first 30 postoperative days. Nineteen patients died or were delisted prior to LT. Fifty-two IMN and 49 CON patients received supplemental nutrition for a median (range) 56 (0-480) and 65 (0-348) d, respectively. Preoperative changes in TBP were not significant (IMN: 0.06±0.15[SEM]; CON: 0.12±0.10 kg). Compared to baseline, a 0.7±0.2 kg loss of TBP was seen in both groups at 30 d after LT (P<0.0001) and, at 360 d, TBP had not increased significantly (IMN: 0.08±0.19 kg; CON: 0.26±0.23 kg). Infectious complications occurred in 31 (60%) IMN and 28 (57%) CON patients (P=0.84). The median hospital stay was 10 d for both groups (P=0.68). In patients undergoing LT, perioperative IMN did not provide significant benefits in terms of preoperative nutritional status or postoperative clinical and body composition outcomes.

Paracetamol overdose: outcomes of patients with liver failure and assessment of criteria for liver transplantation

Lim TH, Gane EJ, Orr DW. NZ Liver Transplant Unit, Auckland City Hospital

Background: Paracetamol overdose is the leading cause of acute liver failure in the Western world. The King’s College Criteria (KCC) for predicting poor prognosis in patients requiring liver transplantation have been criticised due to low sensitivity.

Aim: To evaluate the demographic and laboratory indices of patients presenting with paracetamol overdose and liver failure at Auckland City Hospital and assess the utility of Kings College Criteria.

Method: All patients diagnosed with paracetamol overdose (POD) between 1st August 2000 to 31st July 2010 at Auckland Hospital were identified. The primary outcome measure was assessment of the KCC as a predictor of poor outcome.

1731 patients with POD were identified. 45/1731 (2.5%) patients had an INR>2 (range 2-10.8; mean 4.4). The median age was 23 (range 2-62). 28 of 45 patients
(62%) were intentional overdose, 38% were accidental. Median creatinine was 130 (range 39-750); with 11 patients requiring haemodialysis. 16 patients developed hepatic encephalopathy. The median time from overdose to receiving N-acetylcysteine was 35 hours (range 9-168 hours). 15 patients had staggered overdose. 8 of 45 patients (17.8%) met the poor prognosis KCC. Three were transplanted, 1 was listed but died waiting, 3 patients not suitable for transplant died and 1 recovered. Sensitivity and specificity of the KCC were 100% and 97% respectively, with negative and positive predictive values of 100% and 87.5%.

**Conclusion:** Paracetamol overdose can result in significant morbidity and mortality. Patients with a history of significant overdose should receive prompt treatment with N-acetylcysteine. The Kings College Criteria has an excellent negative predictive value in predicting patients who will survive without transplantation, and an acceptable positive predictive value. Further study is required to assess if addition of lactate levels will improve the predictive value of the KCC.

**ERCP Outcomes of Gallstone Pancreatitis Associated with Cholangitis**

Lee HY, Rose T, Persson S, Lal D. Middlemore Hospital

**Background:** The role and timing of ERCP in gallstone pancreatitis is not fully established. Although cholangitis is regarded as an important indication for early ERCP in gallstone pancreatitis, patient outcomes are not widely published in this group.

**Objective:** To establish the characteristics and outcomes of ERCP in patients with gallstone pancreatitis and evaluate the consequences of coexisting cholangitis.

**Method:** This retrospective audit evaluated 305 patients in Middlemore Hospital who underwent ERCP from January 2001 to April 2010 for gallstone pancreatitis.

**Results:** Ninety-three of 305 patients with gallstone pancreatitis had cholangitis. Cholangiographic evidence of CBD stones was demonstrated in 62% of the cholangitis group and 52% of the non-cholangitis group, with successful CBD stone extraction in 82% and 90% respectively.

Compared to the non-cholangitis group, the cholangitis group had higher rates of severe pancreatitis (32% vs 10%, p<0.001), higher mortality rates (9% vs. 1%, p=0.002), prolonged hospital stay (14.1 days vs 9.8 days, p=0.005) and higher early ERCP rates performed within 1 day (37% vs. 14%, p<0.001). Pancreatic pseudocyst formation and laparotomy rates were not statistically significantly different.
Subgroup analysis within the cholangitis group showed that early ERCP did not demonstrate statistically significant different rates of mortality (9% vs. 8%), laparotomy (6% vs. 4%) or pancreatic pseudocyst formation (9% vs. 8%).

**Conclusion:** In gallstone pancreatitis, concurrent cholangitis was associated with longer inpatient stay and higher mortality despite similar rates of visualized CBD stones and successful stones extraction. Early ERCP within 1 day in patients with coexisting cholangitis did not alter mortality, laparotomy or pancreatic pseudocyst formation rates.

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**Endoscopic Sphincterotomy and Large Balloon Dilatation is an Effective Strategy for Removal of Difficult Biliary Stones – Experience at Wellington Hospital.**

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**Background:** Large biliary duct stones are a challenge for removal by ERCP, particularly those resistant to mechanical lithotripsy (ML). Stone removal can require repeated procedures with interim biliary stent placement. Several studies have demonstrated that endoscopic sphincterotomy and large balloon dilatation (ESLBD) is a safe and effective strategy for removal of stones. Since the beginning of 2008 at Wellington Hospital two operators have introduced ESLBD in order to facilitate stone extraction.

**Methods:** Clinical records of all patients undergoing ERCP from 1 August 2005 to 31 July 2010 were examined retrospectively. Patients who underwent attempted removal of bile duct stones were identified and clinical parameters, endoscopic data, and outcomes were collected and analysed. Outcomes prior to the introduction of ESLBD (“Pre LBD” 1 August 2005 – 31 January 2008) were compared with outcomes after its introduction (“Post LBD” 1 February 2008 – 31 July 2010).

**Findings:** 702 ERCPs were performed over the study period. Biliary stones were found in 247 ERCPs in 227 patients. In the “Pre LBD” period 109 ERCPS to extract stones were performed and additional equipment (basket or ML) was required for 28 of these (25.7%). In the “Post LBD” period 138 ERCPS to extract stones were performed and additional equipment (basket, ML or large dilatation balloon) was required for 33 of these (23.9%). Duct clearance was achieved in 17 ERCPs “Pre LBD” (60.7%) and 24 ERCPs “Post LBD” (70.6%). Placement of a biliary stent was performed in 11 of 28 (39.3%) procedures “Pre LBD” and 7 of 33 (21.2%) procedures “Post LBD”. “Pre LBD” 12 of 21 (57.1%) attempts at stone clearance by ML were
successful. “Post LBD” 20 of 24 (83.3%) attempts at stone clearance by ML or LBD were successful. Stone extraction involving LBD was successful in 18 of 19 cases (94.7%). There was one case of severe post ERCP pancreatitis in the “Pre LBD” group. There were no cases of significant bleeding or pancreatitis in the “Post LBD” group.

Interpretation: ESLBD is a useful adjunct in extracting large or “difficult” stones. ESLBD at Wellington Hospital has lead to a reduction in biliary stenting and repeat procedures, with few complications.

TNM Stage alone is inadequate in the risk assessment of resected colorectal cancer

Keating JP, Gandhi J. Department of Surgery, Wellington Hospital.

Objective: To assess the importance of clinical features, histopathological features and TNM stage in the risk stratification of resected colorectal cancer and their utility as indicators of the need for adjuvant therapy.

Methods: Prospectively collected data was analysed from 500 consecutive cases of colon and rectal cancer resected by a single surgeon with a median follow up of 36 months.

Results: Pathological stage was important in predicting the risk of cancer death in colon and rectal cancer. On multivariate analysis stage, emergent surgery and vascular invasion were independently associated with a worse prognosis in colon cancer and perineural invasion (PNI) and perioperative blood transfusion were associated with an increased risk of death in rectal cancer. Perineural invasion, found in 16% of cases of resected rectal cancer, but in only 8.6% of colon cancers, is a powerful and independent predictor of cancer related death in rectal cancer. Adjuvant chemotherapy significantly improved the survival of colorectal cancer patients whose tumours demonstrated either vascular or perineural invasion (log rank test p<0.04).

Conclusions: Vascular and Perineural invasion and emergent surgery are independent and significant predictors of death from colorectal cancer. TNM staging alone does not provide enough information on which to make decisions on the utility of adjuvant chemotherapy.

Extracellular Matrix Protein 1 is associated with Ulcerative Colitis but is not implicated in Crohn’s Disease

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Objective: Extracellular Matrix Protein 1 (ECM1) is a strong activator of NF-κB. A single study has reported a significant association of single nucleotide polymorphisms (SNPs) in ECM1 with ulcerative colitis (UC). However, subsequent studies have not confirmed this association. The objectives of our study were to attempt an independent replication of the original ECM1 association in Australasian UC patients and to assess the accumulative evidence of association of ECM1 with UC and Crohn’s disease (CD).

Methods: New data for SNP rs3737240 from a New Zealand Caucasian cohort (551 controls, 499 CD and 475 UC patients) and an Australian Caucasian cohort (1648 controls, 545 CD and 587 UC patients) were combined with data from the Wellcome Trust Case Control Consortium (1747 CD patients, 2934 controls) and National Institute of Diabetes and Digestive and Kidney Diseases (813 CD patients, 947 controls), and analysed with the three previously studied Caucasian cohorts. This combined data set had 76% power to detect an OR=1.08 in UC and 71% power to detect the same effect size in CD (MAF=0.38, α=0.05). Separate, fixed-effects model meta-analyses for CD and UC were performed using the Mantel-Haenszel method.

Results: No association of rs3737240 with overall UC or CD was detected within the two Australasian cohorts. Meta-analysis of rs3737240 did not detect any significant association with CD (p=0.55, OR=1.02, 95%CI [0.96-1.08]), but did detect a significant association with UC (p=0.0001, OR=1.14, 95%CI [1.08-1.20]).

Conclusions: Our analyses of all available frequency data for rs3737240 provide support for a role of ECM1 in UC but not CD.
An Unusual Case of Variceal Bleeding

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Introduction: Non-cirrhotic portal hypertension (NCPH) is a condition of elevated portal venous pressure in the absence of cirrhosis.

Case Report: A 49 year old man presented with haematemesis in 2009. He drank alcohol occasionally. HIV was diagnosed in 1996, antiretroviral therapy (ART) commenced in 1999, and Didanosine introduced in 2002. At presentation HIV viral load was undetectable, and CD4 count was 290x106/L.
Initial haemoglobin was 115 g/L dropping to 90 g/L the following day. Four large varicies with a visible platelet plug were noted at endoscopy. Six variceal bands were applied.
Liver enzyme and synthetic tests were normal. Hepatitis A, B, and C serology was negative. Alpha-1-antitrypsin, iron studies, ANA and smooth muscle antibodies, serum immunoglobulins, serum copper and ceruloplasmin were normal. Ultrasound showed 14cm spleen, normal portal blood flow and normal liver. Fibroscanning showed transient elasticity of 5.9kPa (IQR 1.0kPa, 10/10 recordings valid) consistent with minimal fibrosis. Liver biopsy was declined.
His ART was altered (Didanosine removed) and propranolol commenced. Three further elective oesophageal banding sessions were performed over 12 months with no further bleeding.

Discussion: In HIV positive patients, liver disease is usually due to concurrent chronic viral hepatitis, alcohol abuse or non-alcoholic steatohepatitis. NCPH is a newly described condition in HIV positive patients. Cumulative exposure to any ART medication is associated with increased risk of developing NCPH, Didanosine use carrying the most risk. NCPH is also positively associated with homosexuality, leading to the hypothesis that damage to the portal venous system is related to recurrent septic microemboli caused by anal trauma.
In a follow up analysis over 12 years 4/15 patients with ART associated NCPH died of liver failure or variceal bleeding, suggesting these patients warrant ongoing monitoring for development of complications.
This is the first report of Didanosine associated NCPH identified in NZ. Despite the small HIV population in NZ it is important clinicians remain vigilant for complications of the disease and its therapy.

References
Clinical audit of Follow-up of patients with Colorectal cancer following curative resection at Dunedin Hospital: Provisional Results

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Purpose: To determine adherence to Otago Guidelines for colorectal cancer (CRC) follow-up at Dunedin Hospital.

Methods: Electronic records retrospectively reviewed for stage II/III CRC patients receiving surgery between 1/01/2004 and 31/12/2007. Data, including: colonoscopy, CT, clinic appointments, and CEA levels, were compared with guidelines.

Results: Mean age of 247 eligible patients was 69.6 years. Before surgery, 123 (50%) received a CT and 78 (32%) a CEA measurement. Of 215 patients followed for at least one year, 99 (46%) had a complete colonoscopy either in the 6 months before surgery or one year after. Of 134 patients followed for 3.5 years, 79 (59%) had the appropriate number of clinic appointments; 66 (31%) at appropriate times. At 3 years, 108 (71%) of 152 had the required number of CEA measurements; 39 (17%) at appropriate intervals. One year after surgery, 91 (42%) of 215 patients received a CT scan. Of 152 patients, followed for at least 3 years, 107 (70%) had \( \leq 2 \) CT scans. At 3.5 years, 50 (37%) of 134 patients had at least one complete follow-up colonoscopy.

Conclusion: Pre-operative staging and follow-up of patients after surgery did not meet guidelines. No patient was followed up in all modalities according to guidelines. Conversely, every patient received at least one follow-up investigation, of at least one modality. CRC is one of the only potentially curable cancers after metastatic spread; early detection of recurrence is important.

A new biodegradable self expanding stent for the temporary relief of malignant dysphagia

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Dysphagia, often of a debilitating degree, is the principal symptom associated with malignancy of the oesophagus and cardio-oesophageal junction. Good palliation can be obtained using self expanding metallic stents (SEMS). However these stents are essentially irremovable and preclude the subsequent use of radiotherapy as a definitive, adjuvant or palliative therapy.

We report the use of a new biodegradable self expanding stent made of polydioxone (PDS), SX-ELLA BD, in six patients prior to subsequent treatment with neoadjuvent or palliative radiotherapy or chemo-radiotherapy. Satisfactory palliation of dysphagia was achieved in all patients for periods of up to eleven weeks to allow the additional therapy. After this period patients either received surgery or a definitive SEMS.

We conclude that a biodegradable self expanding stent is a useful temporary measure to relieve malignant dysphagia in patients who are to receive concurrent therapy.

**Does ProVation capture colonoscopy KPIs?**

**Johns EM** (WDHB), Theobald DR (WDHB), Frankish PD (WDHB), Walmsley RS (WDHB), Rowbotham DS (ADHB), Ogra RK (CMDHB)

With the advent of bowel cancer screening programs documentation of colonoscopy quality is receiving increasing attention. Key performance indicators (KPIs) are well established but require meticulous collection of a large volume of information. The endoscopy database program ProVation has recently been introduced across the Auckland region. Its potential as a quality assurance tool was a key reason for its implementation, and its future use as a nationwide audit tool is under consideration.

This prospective audit of all colonoscopies performed in the Auckland DHBs over a three-month period was a proof of concept investigation to assess whether KPIs could be extracted from ProVation reports.

KPIs assessed were
1. Caecal intubation rate
2. Documentation of bowel preparation quality
3. Mean withdrawal time for procedures without polypectomy
4. Adenoma detection rate
5. Polyp recovery rate
6. Documentation of follow-up recommendations
7. Complications

Data was preliminarily examined to assess progress. Several problems with documentation were identified and fed back to departments in order to improve data collection.
The Provation program can be used as a useful reporting tool as part of the audit cycle. With education and minor modifications it should provide data on most KPIs required for quality assurance with some limitations.

**Endoscopic therapy for treatment of anastomotic leaks post bariatric surgery: A case series from Middlemore Hospital**

**Authors:** Lim TH, Ogra R, Department of Gastroenterology, Middlemore Hospital, Auckland, NZ.

**Background:** The number of bariatric operations performed is increasing worldwide. In Middlemore Hospital, 350 operations have been performed since 2007. Reoperations for complications can be associated with high morbidity and mortality. Endoscopic therapy for treatment of leaks has previously been described in some small case series overseas\(^1,2,3\), but to date there has been limited experience in New Zealand.

**Aim:** To describe the use of endoscopic therapy (stents alone or in combination with other techniques) for treatment of anastomotic leaks post bariatric surgery at Middlemore Hospital.

**Methods:** 8 patients with anastomotic leaks post bariatric surgery had endoscopic treatment from June 2007 to August 2010. 7 patients had sleeve gastrectomy (1 gastric bypass). 3 patients required repeat laparotomy for sepsis with hemodynamic instability within 3 weeks of the initial surgery, but unfortunately had ongoing leaks. Covered self expanding metal stents were used. Complementary endoscopic treatments included hemoclips, histoacryl, balloon dilations and pyloric botox injection. Conventional stents have been replaced by wider and cuffed stents to reduce migration. Stent removal was uncomplicated. 4 patients were discharged within 1 week of stent placement. Stent duration ranged from 9 to 99 days (mean = median= 47 days). All patients had successful closure of the leak without requiring repeat surgery.

**Conclusion:** Endoscopic treatment with metal stents can be successfully done for treatment of anastomotic leaks post bariatric surgery, thus avoiding the need for reoperation and shortening the length of hospital stay.

**References:**


Streptococcus Bovis Bacteraemia in Dunedin Hospital from 1997 to 2009: A Case Series

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Background: While Streptococcus bovis bacteraemia has been associated with colorectal neoplasia, it is unclear how strong this association is. We present a case series of patients with Streptococcus bovis bacteraemia from Dunedin Hospital, looking in particular at the rate of colorectal neoplasia.

Methods: A prospective record of all positive blood cultures is maintained at Dunedin Hospital. We performed a retrospective review from 1997 to 2009 of patients with blood cultures growing Streptococcus bovis.

Results: Nine patients were identified with Streptococcus bovis bacteraemia. They ranged in age from 36 to 90 years old. Three had died, all within six months of their bacteraemia. Only one patient died as a result of endocarditis. Three patients had definite endocarditis, two had possible endocarditis, and four did not have endocarditis according to the Duke criteria. Five patients had a colonoscopy, all referred after their bacteraemia. Of these patients, one had a moderately differentiated rectosigmoid adenocarcinoma. This was inoperable due to the patient’s comorbidities. Another patient had a tubulovillous adenoma with low grade dysplasia, while the other patients had a normal bowel examination. Two of the four patients not investigated with colonoscopy died as a result of their initial illness. The other two patients have not had any new diagnoses of colorectal neoplasia 15 months and five years respectively after their initial bacteraemia.

Conclusion: Only one patient in our series had colorectal neoplasia amenable to curative treatment. Streptococcus bovis bacteraemia is an uncommon condition, with ongoing debate over its long term management.
**Extreme Proximal Stenting of Upper Oesophageal Carcinoma is Possible and Practical**

Ow M, Ogra R. Department of Gastroenterology, Middlemore Hospital, Auckland.

**Introduction:** Dysphagia due to high upper oesophageal carcinoma can pose a challenge in symptom palliation as endoscopic stenting is complicated by its proximity to the cricopharyngeus. Common problems include throat irritation, discomfort with swallowing, vocal cord palsy, and airway obstruction. We report three cases of successful extreme proximal stenting of upper oesophageal carcinoma with a proximal releasing stent.

**Methods:** All cases were deemed unsuitable for conventional stents. We used custom made NITI-S proximal releasing stents 100mm long and 18mm wide with narrow proximal flare. The proximal flare was released within the proximal end of the tumour under endoscopic and fluoroscopic control.

**Results:** Three patients aged between 77 and 83 years were treated with NITI-S proximal releasing stents from 2008-2009 for dysphagia due to inoperable oesophageal squamous cell carcinoma. All patients had failed palliative radiotherapy. All of them derived significant improvement in their dysphagia. The locations of the tumours were 5mm (patient A), 15mm (patient B), and 20mm (patient C) distal to the cricopharyngeus. Two stents required minor distal adjustment due to throat irritation. The patients were managed endoscopically using dilatation and APC and good palliation was achieved in all. Patients A, B, and C died 8, 13, and 6 months later, respectively, of progressive disease.

**Conclusion:** Dysphagia due to extreme proximal oesophageal carcinoma can be successfully treated using a proximal releasing stent. Despite the extreme proximity to the cricopharyngeus, all cases had symptomatic improvement with no major complications. Mild throat irritation can be solved by displacing the stent 1cm inferiorly.

**Treatment Outcomes and Prognosis in Adults with Eosinophilic Oesophagitis**

Ow M. Department of Gastroenterology, Middlemore Hospital, Auckland.

**Introduction:** Eosinophilic oesophagitis (EO) is now a well-recognised entity and is increasingly diagnosed. Treatment options are scarce, with limited literature on efficacy and prognosis. This retrospective study aims to assess treatment outcomes and prognosis of patients with EO in Auckland.
Methods: Patients diagnosed with EO (confirmed histologically) between 2005 and 2010 from Middlemore and Auckland City Hospitals were analysed. Approval from North Shore Hospital is pending. Demographics, clinical history, endoscopic findings, and prescribed treatments were noted. The primary outcome was response to treatment. Secondary outcomes were EO-related complications, hospital admission rates, and response to concurrent proton pump inhibitor (PPI).

Results: A total of 52 patients were included. 81% were males. The median age was 40 years. 90% were Caucasian. 44% had an atopic condition. The commonest mode of presentation was dysphagia, followed by food bolus obstruction. 29% had concurrent reflux. 40 out of 52 (58%) patients had features endoscopically suggestive of EO. Median follow up was 2.8 years. 6 patients were lost to follow-up after endoscopy.

In the 46 patients that had follow-up, 32 (69%) were prescribed swallowed fluticasone. Of the 32, 10 (31%) had symptom improvement, 13 (41%) had no change in symptoms, and 9 (28%) had progressive symptoms. 6 of the 9 with progressive symptoms required repeated admissions post-diagnosis for food bolus disimpaction. There were no other EO-related complications.

56% of patients were given concurrent PPI. There was no difference in treatment outcome with or without concurrent PPI.

Conclusion: Swallowed fluticasone in eosinophilic oesophagitis was not beneficial in the majority, with a response rate of 31%. The addition of PPI did not offer any benefit. The prognosis was generally good with either stable or improved symptoms. In the minority who developed worsening symptoms despite treatment, there was a high risk (67%) of repeated food bolus obstruction.

Stenting for achalasia - Progress in Interventional Endoscopy

Dr Ogra R, Dr Tibbatts C
Middlemore Hospital

Aim: Temporary removable stents have been reported recently as a first line management of Achalasia cardia (reference). To report our experience of using emerging techniques in interventional endoscopy at Middlemore Hospital.

Method: We have case reports of 2 patients who successfully underwent oesophageal stent placement for dilatation of achalasia.

Results: 2 patients with achalasia diagnosed on manometry, had elective placement of Niti-S double-covered 28mm stents. One had failed treatment with balloon dilatation and the other had undergone no prior therapies. The protocol aimed to remove the stents at 5 days. Insertion was successful in both patients with complete resolution of
dysphagia. 1 patient required early removal of the stent due to uncontrolled pain at day 2, with immediate relief of symptoms. Both stents were easily removed with rat-toothed forceps, with only minor oesophageal ulceration in one patient that required no intervention.

**Conclusion:** Stenting for achalasia is emerging as an alternative non-surgical therapy for achalasia, both as a primary or secondary option.

**EMR for removal of HGD in Barrett’s - Progress in Interventional Endoscopy**

Dr Ogra R, Dr Tibbatts C  
Middlemore Hospital

**Aim:** Endoscopic mucosal resection has emerged as a safe and effective eradication of Dysplastic Barrett’s reducing the need for high risk Oesophagectomy  
To report our experience of using emerging techniques in interventional endoscopy at Middlemore Hospital.

**Method:** We have case reports of 8 patients who achieved eradication of their dysplastic Barrett’s oesophagus via endoscopic mucosal resection (EMR).

**Results:** 6 patients with biopsy proven HGD and 2 with frank adenocarcinoma within Barrett’s oesophagus underwent EMR with Inoue Cap and snare and Duette multiband ligation system over the last 3 years. The extent ranged from 1-15cm in length. Subsequent endoscopy, showed that all the patients had had their Barrett’s successfully eradicated with no evidence of high grade dysplasia on biopsies. The length of follow-up varied from 6 months to 2 years, with the only reported complication being 1 benign stricture which required dilatation. 1 patient died from unrelated causes.

**Conclusion:** EMR for Barrett’s or Intramucosal oesophageal adenocarcinomas, appears to be an effective method for achieving long-term clearance via endoscopic therapy.

**HBsAg Kinetics of Decay and Baseline Characteristics of HBeAg Positive Patients with Chronic Hepatitis B Following 3 Years of Tenofovir Disoproxil Fumarate (TDF) Treatment**

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Background: Increasing cumulative HBsAg loss was observed in HBeAg+ patients treated with TDF for up to 3 years: The goal was to characterize changes in HBsAg levels over time in patients with/without HBsAg loss and evaluate baseline factors correlated with HBsAg loss.

Methods: Patients with HBeAg+ chronic hepatitis B (CHB) were randomized to double-blind, treatment (TDF N=176) or adefovir dipivoxil (ADV N=90) for 48 weeks. Subjects with W48 liver biopsy were switched to open label TDF for 7 additional years (TDF-TDF and ADV-TDF). HBsAg was quantified every 12 weeks through W144.

Results: Overall the median baseline HBsAg level (range) was 4.56 log\(_{10}\) IU/mL (1.01, 5.40) and the median HBsAg change from baseline (range) at W144 was -0.63 log\(_{10}\) IU/mL (-5.40, 1.12). Cumulatively 8% of HBeAg positive patients experienced HBsAg loss and 6%/7% seroconversion to anti-HBs by W144 (TDF-TDF/ADV-TDF groups, respectively). Among TDF-TDF patients with HBsAg loss all but 1 were genotype A/D. At baseline all had HBsAg \(\geq 4.5\) log\(_{10}\) IU/mL and most had Knodell necroinflammatory score \(\geq 9\), and HBV DNA \(\geq 9\) log\(_{10}\) copies/mL. In patients treated with TDF for 3 years, HBsAg loss occurred in 12/94 (13%) genotype A/D patients, 12/75 (16%) with baseline HBV DNA \(\geq 9\) log\(_{10}\) copies/mL, 13/90 (14%) with HBsAg \(\geq 4.5\) log IU/mL, and 11/113 (10%) with Knodell necroinflammatory score \(\geq 9\).

Conclusion: Higher baseline HBsAg level and HBV DNA, viral genotype A or D and higher baseline Knodell necroinflammatory score were common features among HBeAg+ patients achieving HBsAg clearance on TDF through W144.

Tenofovir Disoproxil Fumarate (TDF) Versus Emtricitabine Plus TDF (FTC/TDF) for Treatment of Chronic Hepatitis B (CHB) In Patients with Persistent Viral Replication Receiving Adefovir Dipivoxil: Final Week 168 Results

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Background: This double-blind study compared TDF monotherapy versus FTC/TDF in CHB patients who had incomplete virologic response after receiving adefovir dipivoxil (ADV) for \(\geq 6\) months.
Methods: Patients were randomized to TDF or FTC/TDF. Entry criteria included current ADV therapy (lamivudine [LAM] experience allowed, TDF naïve), HBV DNA $\geq$1000 c/mL and ALT < 10 × upper limit of normal. HBV DNA was measured using the Roche COBAS TaqMan assay (LLOQ=169 cp/mL; 29 IU/mL). Patients could receive open-label FTC/TDF after 24 weeks if persistent viraemia (HBV DNA > 400 copies/mL) confirmed.

Results: Overall 53 patients received TDF and 52 FTC/TDF; 58% had prior LAM experience. At baseline 13 had LAM-associated mutations (LAM-r) and 10 ADV-associated mutations (ADV-r). Sixteen and 9 patients in the TDF and FTC/TDF arms, respectively, switched to open-label FTC/TDF after W24. Through W156 (study ongoing through W168), 88% and 85% of patients randomized to TDF and FTC/TDF, respectively, had HBV DNA < 400 cp/mL (p=0.757); 13/13 with LAM-r and 9/10 with ADV-r were < 400 cp/mL(intent to treat analysis, non-completion=failure). ALT normalization was achieved in 71% (TDF) and 77% (FTC/TDF) of patients (p=0.521). Both TDF and FTC/TDF were well-tolerated; creatinine and creatinine clearance remained stable for the study duration.

Conclusion: Through 156 weeks > 85% of patients on either blinded treatment or open-label FTC/TDF had HBV DNA < 400 cp/mL. This response was numerically greater in patients with baseline LAM-r or ADV-r (100% and 90%, respectively). No efficacy difference was observed between TDF monotherapy and FTC/TDF combination therapy.

Use of Adjuvant! in the management of patients with colon cancer

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Background: Many clinical decision support tools (CDSS) that provide specific advice on cancer management are available; their uptake and influence in New Zealand has not previously been reported. Preliminary investigation revealed that Adjuvant! is one of the most widely available and frequently used. Adjuvant! combines information from the SEER database and chemotherapeutic trials to provide estimates of recurrence risk and treatment benefit for patients with colon and breast cancer. It is available online free of charge.

Objectives: To determine how clinicians utilise Adjuvant! for colon cancer; to assess clinician assessment of the future of CDSS for patients with cancer.
Methods: Online survey of New Zealand clinicians who manage patients with colon and breast cancer (n=115).

Results: Adjuvant! is used by a smaller proportion of clinicians during the management of patients with colon cancer than during the management of patients with breast cancer (72% v 38%, P<0.0001). 33% of clinicians who use Adjuvant! for colon cancer report that it affects their treatment decisions, but 68% think that it improves patient outcomes. Use of Adjuvant! for colon cancer is most commonly limited by time pressure and lack of internet access. Over 80% of clinicians surveyed think that CDSS will have more impact on the care of patients with cancer over the next 10 years.

Conclusions: In New Zealand Adjuvant! is commonly used during the management of patients with colon cancer and clinicians forecast that the influence of CDSS will increase. It is vital that CDSS are adequately validated for our population, and their ability to positively influence patient outcome is assessed.

Limited effectiveness of three different probiotics on mild colitis in IL10−/− mice

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Background: Clinical and experimental efficacy of probiotic therapy varies depending on bacterial species and formulation. This study investigates how fundamental microbiological properties of probiotics (gram-negative vs gram-positive) and symbiosis (multi-species application) affect colitis in IL-10−/− mice.

Methods: IL10−/− and wildtype (WT) mice were treated with 5x10⁹ cfu/ml bacteria for 5 weeks. Animals received either one of two single-strain applications (E. coli Nissle 1917 or L. rhamnosus GG (LGG)), or a multi-strain application (LGG, B. lactis Bb12, L. rhamnosus Lc705, P. shermanii JS). Clinical score, body weight and stool consistency were monitored weekly. At the end of intervention, colon length and spleen weight were assessed, tissue sections were scored for histological inflammation, and expression of cytokines TNFα, IFNγ and IL17 was determined.

Results: Clinical score and weight gain were not different between untreated IL-10−/− and WT mice and probiotic-treated animals. Untreated IL10−/− mice had slightly increased stool water content (p<0.05), which was normalised by all probiotic
treatments. Treatment had no effect on colon length, and only the multi-strain application slightly improved (p=0.054) splenomegaly in IL10<sup>-/-</sup> mice. Histology scores of untreated IL10<sup>-/-</sup> mice were significantly (p<0.001) increased compared to WT, as was expression of IFNγ (p<0.001), TNFα and IL17 (both p<0.01). However, neither probiotic treatment improved these parameters.

**Conclusion:** The effectiveness of different probiotics was limited in this model of mild clinical disease and mild-to-moderate colitis. Based on these findings, we propose that probiotics exert their anti-inflammatory effect through common immune pathways of which activation is low or absent in this model. Further investigation will be necessary.

**Injection of Methylene Blue into the dominant arterial supply of colorectal resection specimens ex-vivo increases nodal harvest.**

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Adequate nodal harvest as recommended by the AJCC for colorectal cancer (CRC) is variably attained. The percentage attained by a Surgical Unit is not specified in these recommendations. The significance of a metastatic negative nodal count increases with the total node harvest. 5 year survival shows a significant difference relating to the total number of nodes harvested in the specimen. The purpose of the study was to show an increase in node harvest. We retrospectively reviewed all colorectal cancer resection specimen data (n=105) for our unit’s two colorectal surgeons for the twelve months of January to December 2009. Adequate nodal harvest count was achieved in 45.71%(n=48). Prospectively we studied the nodal harvest count of 40 specimens in which we injected a total of 6ml combining Methylene Blue and Normal Saline in a 1:1 ratio into the dominant arterial supply of the specimen ex-vivo. X² show that 30 out of 40 specimens meeting the 12 node cut-off would give us a statistically significant improvement in node count P<0.005 (95% CI 0.596-0.859) powered to 83%. Preliminary results show most significance for colon resections. Rectal specimens do not show as marked an improvement. The pathological deleterious effects of methylene blue are nil therefore we promote its use for all specimens but realise further study with randomisation of this subgroup is needed.

**Pilot Study at to Support the Management and Review of Patients Discharged from Hutt Hospital on a Proton Pump Inhibitor**

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Aims: To evaluate whether the inclusion of post hospital admission, electronic discharge instructions to GPs regarding proton pump inhibitor (PPI) therapy could improve compliance with the NZGG guidelines on PPI use.

Method: Consecutive patients admitted to the Hutt Hospital medical ward, who were initiated on or previously taking a PPI, were recruited to the study. Patients were block randomised to a standard discharge summary group or to an intervention group. The intervention group had a specific PPI discharge summary template completed that provided instructions to the GP concerning the review of PPI therapy according to the NZGG guidelines. GP records were reviewed three months following discharge and adherence with the NZGG guidelines was assessed. A survey of GPs who participated was performed at completion of the study.

Results: 51 patients were evaluated, 26 were randomised to the control group and 25 to the intervention group. Three months post discharge 4 (15%) of patients in the control group and 6 (24%) (p=0.7) of patients in the intervention group had had their PPI therapy reviewed by their GP in accordance with the NZGG guidelines.

The 33 GPs involved in the study were sent a questionnaire following the study. Of the GPs who had received the intervention template only 3/9 (30%) had noticed the new section. In all 3 cases the GP stated that the template prompted them to review their patient and assisted them with this review.

Conclusions: This study shows that adherence with the NZGG guidelines on PPI prescribing is poor post hospital discharge. However, we were not able demonstrate a beneficial change in PPI prescribing practice from the inclusion of PPI prescribing advice in the discharge summary. This may relate to the fact that many GPs did not notice the advice in the discharge summary. A strategy that guarantees patient review that is focussed on PPI prescribing issues may be necessary. Further research is needed to identify a strategy that could beneficially affect PPI prescribing practice.

Light at the end of the tunnel: To develop a fair, single access GI Endoscopy Service.

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Colorectal cancer is the second commonest cause of cancer related death after lung cancer. The lifetime risk of developing colorectal cancer is 1:20 New Zealanders by the age of 75yrs. Each year about 2500 New Zealanders will develop the disease and about 1000 will die as a result. Southland and Otago have the highest rates of colorectal cancer recorded worldwide.
Colonoscopy is recognised as the “gold standard” for investigating patients with symptoms suggestive of CRC, however this is an expensive and oversubscribed resource.

By securing funding via a Ministry of Health initiative “Improving Patient Pathways in Diagnostics” and we undertook a project to redesign the referral pathway in Endoscopy. The aim was to ensure equitable access to colonoscopy where priority was decided by clinical need rather than route of referral. Referrals were directed through a central access point and standard triage criteria (CPAC) were applied. A robust system for data collection was designed such that the numbers of patients waiting and the time that they were waiting for could be accurately monitored. In a three month period audited after the completion of the pilot a total of 427 patients underwent colonoscopy compared to 322 patients in the same three month period the year before. This equates to a 30% increase in throughput.

**Current Experience of Single-Balloon Enteroscopy at Middlemore Hospital**

**Judy Huang**, Paul Casey, Ravindra Ogra, Alasdair Patrick Gastroenterology Department, Middlemore Hospital

**Background:** Single-balloon Enteroscopy is an established endoscopic technique which allows deep intubation into small intestine. It is an alternative tool to Double Balloon but may not offer an equivalent yield.

**Aim:** To evaluate the early clinical experience of Single-balloon Enteroscopy in Middlemore Hospital.

**Method:** A retrospective clinical audit on all patients who have received single-balloon enteroscopy since it was first introduced in Middlemore Hospital till present. Demographical and clinical data of the patients were collected.

**Results:** There were 50 single-balloon enteroscopy procedures (40 antegrade, 10 retrograde) performed on 41 patients (mean age 54.7 years, range 13 ~87 years, 23 (56%) males). Indications for SBE included abnormal pill cam finding (22, 44%), occult gastrointestinal bleeding (13, 26%), abdominal pain with abnormal computed tomography finding (9, 18%), abdominal pain without abnormal imaging (2, 4%) and surveillance or other use (4, 8%). Diagnostic yields in cases of abnormal pill cam finding, OGIB and abnormal CT finding were 54.5%, 61.5% and 55.6% respectively. The more common diagnosis is angiodysplasia in OGIB and abnormal pill cam finding. The mean length of small bowel examined was 215cm in antegrade approach (26 documented). 4 patients received both antegrade and retrograde enteroscopies with 75% (3) diagnostic yield. In 18% of SBE procedures, therapy was given.
Conclusion: Initial experience with Single-Balloon Enteroscopy has produced a good diagnostic yield which is at least comparable to that in published literature.

Preliminary Results of an Audit of Screening for Infectious Diseases Prior to Infliximab Therapy

Proverbs A, Hill J, Brooker J, Gastroenterology Department, Waikato Hospital.

Background: This year the New Zealand Society of Gastroenterology published a statement on the use of biological therapy in inflammatory bowel disease (IBD) (1). This included guidelines on pre-treatment screening for infectious diseases.

Aim: To audit pre-treatment screening for infectious diseases (TB, Hep B, Hep C, HIV, Varicella Zoster) of patients who are currently receiving infliximab for inflammatory bowel disease at Waikato Hospital.

Method: All patients who received infliximab therapy for IBD at Waikato Hospital from February 2010 to April 2010 were included. Pre-treatment investigations were identified using the hospital clinical results viewer (iSOFT) and the community results viewer (Eclair). Investigations were included only if they were carried out within the 12 months preceding the first dose of infliximab.

Results: 23 patients received infliximab for IBD during the audit period. The results were as follows:

<table>
<thead>
<tr>
<th></th>
<th>Hep B</th>
<th>Hep C</th>
<th>HIV</th>
<th>VZV</th>
<th>TB (Mantoux or QFT)</th>
<th>CXR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-treatment testing (%)</td>
<td>48%</td>
<td>43%</td>
<td>35%</td>
<td>22%</td>
<td>35%</td>
<td>39%</td>
</tr>
</tbody>
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Conclusion: Screening for infectious diseases has not been carried out routinely prior to commencing infliximab therapy at Waikato Hospital. A pre-treatment screening checklist has now been introduced and the complete audit data will be available for presentation.

References
Mycophenolate Mofetil (MMF) use in Liver Transplantation in New Zealand

Hsiang, JC. Harrison, B, Harry R. NZLTU, Auckland City Hospital

Aim: To audit the use of MMF in liver transplantation in New Zealand.

Methods: Patients treated with MMF between 2004 and February 2010 were identified retrospectively from Pharmac databases and divided into 2 groups; A: MMF as primary immunosuppression as part of a renal protection protocol with IL2 receptor antibody, steroids and delayed tacrolimus and B: those switched to MMF based second line therapy (B). Clinical data was retrieved from NZLTU database.

Results: 61 patients were identified for study (13 Group A, 48 group B) with most (79%) started on MMF since 2008.
In group A, the renal protection protocol was adhered to in each case in the first week but none received therapy to one year. During MMF therapy (93 days IQR 148), 2 patients (15.4%) developed 4 episodes of acute rejection (ACR). None developed CMV.
In group B, MMF was started 361 days (IQR 1617) after transplant. In 29 patients (60%) this was for renal impairment. 8 of these (28%) underwent renal US,14 (48%) MSU and 6 (20%) formal creatinine clearance as per switching protocol. During MMF therapy (441 days IQR 105), 11 patients (22.9%) had 21 episodes of ACR and 4 patients (8%) developed CMV.

Conclusion: Use of MMF post liver transplant in New Zealand is increasing. ACR and CMV occur during its use. Further study is required to assess the clinical importance of these findings.