hospital admission over 12 months and 8% required a TIPS procedure within 12 months. The actual cost of rebleeding episodes for the selected subgroup was 138 446, (3955 per patient). The theoretical cost of early TIPS in this group was calculated as 117 670, (3362 per patient). Assuming a rebleeding rate of 3% with early TIPS[1], this strategy has a potential cost reduction of 7% per patient outcome year compared with current standard management.
Conclusion The proportion of variceal bleed patients benefitting from early TIPS could approach 70% in regional centres. This has implications for the provision and organisation of interventional radiology services. Our retrospective analysis suggests marginal cost benefit, complementing the previously observed reduction in rebleeding and mortality; however prospective studies are needed to confirm this.

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P40 FAST TRACK JAUNDICE CLINIC: THE STANDARD OF CARE FOR HEPATOBILIARY MALIGNANCY?

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Introduction The Scottish Government has stated that 95% of people referred urgently with a suspicion of cancer should begin treatment within 62 days of receipt of referral.[1] Dedicated fast track clinics with pre-booked appointments and scheduled investigations with rapid reporting can ensure urgent referrals are processed within appropriate timescales.[2] Hepatobiliary malignancy often presents with jaundice and therefore The Fast Track Jaundice clinic was established in NHS Grampian in June 2006.[3] Its aim was to provide rapid diagnosis of jaundiced patients enabling early management or treatment. This protocol driven clinic is run by the Hepatology Nurse Specialist with medical support. Referrals are faxed and patients who meet the criteria for the clinic are contacted by telephone and given an appointment date and time within a week of referral. The clinic operates weekly with three reserved appointment slots for ultrasound and two for CT scan. Endoscopic Retrograde Cholangiopancreatography (ERCP) is available three times per week.
Aim The aims of this study were: To describe the demographics and diagnoses of patients referred with jaundice. To assess the time from referral to treatment in patients presenting with malignancy.
Method The information was obtained from the NHS Grampian Fast Track Jaundice clinic Microsoft Access database and the hospital Patient Management System (PMS). The Scottish Care Information (SCI) store and hospital LABS system were accessed to obtain dates of investigations and results.
Results In total there were 172 referrals and all but one attended. The majority, 150 (87%) were referred by their GP, the remainder came from a variety of sources. The number of referrals has increased each year. The mean age at date of clinic appointment was 63 years (range 18–94, SD 16.7) and 116 (67%) were male. The median number of days from referral to clinic appointment was 5 (range 0–20, IQR 2). The reasons that patients waited longer than expected for a clinic appointment included: patient choice, inability to contact the patient and lack of capacity at next clinic. The aetiology of jaundice was: gallstones 65 (38%), malignancy 50 (29%), alcohol hepatitis 19 (11%), or an alternative diagnosis in 37 (22%). A CT scan was required for diagnostic or staging purposes in 90 (53%) with 74 (82%) of CT scans performed on the same day as the clinic. The CT scan had been performed prior to the clinic in 2 (2%) with the remaining scans occurring sometime following clinic.

Of the 50 patients with a malignancy, 13 (26%) had surgery with only 2 operations being outwith the 62-day timeframe (median time from clinic 36 days (range 4–99, IQR 38)). Of the remaining 37 (74%) who did not have surgery, 23 (62%) had ERCP (median time from clinic 3 days (range 1–38, IQR 7)) and 6 (16%) had PTC (mean time from clinic 9 days (range 4–16, SD 4.32)). The remaining 8 (22%) presented with such advanced disease that only palliative care was offered. Of those with malignancy 33/50 (66%) have died with a median time from clinic to death of 127 days (range 5–781 IQR 344).
Conclusion The introduction of The Fast Track Jaundice Clinic has resulted in patients with malignancy having clinical review and investigations performed rapidly with >95% receiving definitive treatment within 62 days of referral. The recognition of this service in providing timely, appropriate care has resulted in a steady increase in the number of referrals. We suggest that this model of service delivery should be considered as the standard of care for patients with suspected hepatobiliary malignancy presenting with jaundice.

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P41 LIVER DISEASE-SPECIFIC GENE EXPRESSION PROFILE IN HEPATOCELLULAR CARCINOMA

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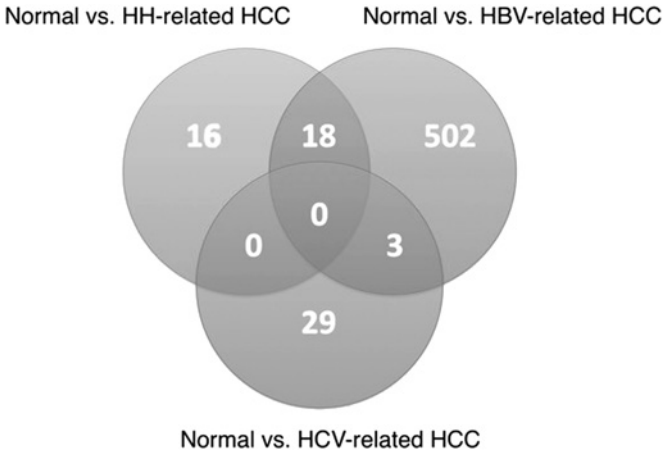
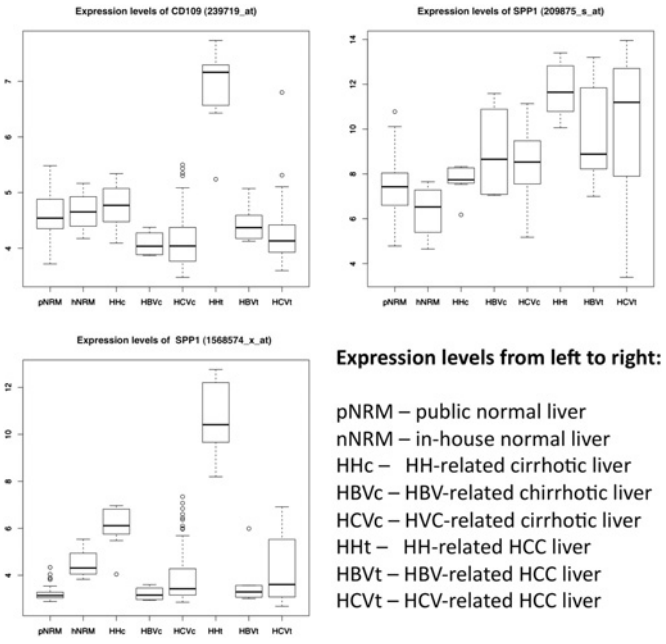
Introduction In the UK, hepatocellular carcinoma (HCC) has the largest increase in cancer mortality of all cancers over the last decade. Although it is well known that the most important risk factor for HCC development is liver cirrhosis, the specific role of liver disease aetiology in promoting cancer development remains under-explored. We hypothesised that different liver diseases might drive HCC development by expression of different sets of genes. Identification of liver disease-specific genes could be applied to developing disease-specific diagnostic markers or therapeutic targets.
Aim To compare global gene expression profiles from HCC arising in different liver diseases, using our own and publicly available data.
Method Fresh-frozen liver samples were collected from normal liver (4) and both background liver (7) and HCC (7) from patients with haemochromatosis (HH) undergoing liver transplantation or resection for HCC. RNA was extracted using a phenol-chloroform method, assessed for quality then hybridised to Affymetrix



Abstract P41 Figure 1 Venn diagram showing number of differentially expressed genes in HCV, HBV and HH related HCC compared to normal liver.



Abstract P41 Figure 2 Expression level of SPP1 and CD109 in normal liver and HCV, HBV and HH related cirrhosis and HCC.

U133Plus2.0 gene expression arrays. Public microarray databases ArrayExpress and Gene Expression Omnibus were mined for liver gene expression data measured using Affymetrix U133Plus2.0 array platform. Annotations for all identified liver samples were curated and relevant samples selected for RMA normalisation. Principal component analysis and differential gene expression analysis were carried out using R Bioconductor. The lists of differentially expressed genes were created by separate comparison of each disease group against normal liver samples. The lists of p value corrected statistically significant genes were further filtered for twofold expression change. Disease specific gene lists were created. Genes identified as highly expressed in HH-related HCC were validated using quantitative RT-PCR.

Results Public databases yielded gene expression data on normal liver (n=51), HCV/cirrhosis (n=59), HCV-related HCC (n=126), HBV/cirrhosis (n=4), and HBV-related HCC (n=5). Principal component analysis showed clustering of normal, cirrhosis and HCC samples. Using a twofold cut-off, 16 genes were differentially expressed in HH-related HCC compared to normal liver, 502 genes in HBV-related HCC and 29 genes in HCV-related HCC (Abstract P41 figure 1). No differentially-expressed genes were common to all three groups. Genes CD109 and SPP1 were identified as highly expressed in HH-related HCC compared to all other groups (Abstract P41 figure 2) and their expression in normal and HH samples were confirmed with quantitative RT-PCR.

Conclusion Comparison of global gene expression profiles yielded sets of differentially expressed genes specific to liver disease aetiology in HCC related to HCV, HBV and haemochromatosis. Two genes highly expressed in haemochromatosis-related HCC were identified that might be useful as disease-specific markers.

P42 ROLE OF ACOUSTIC RADIATION FORCE IMPULSE (ARFI) ELASTOGRAPHY IN THE NON-INVASIVE ASSESSMENT OF LIVER FIBROSIS IN CHRONIC VIRAL HEPATITIS: A SIMULTANEOUS COMPARISON WITH LIVER HISTOLOGY IN A SECONDARY CARE SETTING

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Introduction The estimation of liver fibrosis in patients chronically infected with hepatitis B or C is crucial in determining the prognosis, surveillance, and treatment decisions. Liver biopsy is still the gold-standard for assessing liver fibrosis. However, it is susceptible to variability in interpretation and carries an associated morbidity and mortality. ARFI elastography is a novel, non-invasive technology incorporated into conventional B-mode ultrasonography that is used to assess liver fibrosis.

Aim To compare ultrasound elastography stiffness scores in patients with chronic hepatitis B or C disease with concomitantly acquired histopathology specimen scores.

Method A total of 80 patients underwent ARFI elastography, real time ultrasound examination of the liver and concomitant ultrasound guided biopsy between January 2010 and December 2010. Of these patients, 34 patients had chronic viral hepatitis (18 Hepatitis B, 16 Hepatitis C). All liver biopsies were carried out to aid the management of the patients. The ARFI elastographies and the liver biopsies were carried out by a single operator. Elastography scores were obtained (using a Siemens Acuson S2000 and 4C1 probe 4 MHz transducer) in the same anatomical region of the liver as the biopsy which was taken using a Biopince 18 gauge Menghini type needle. All liver histology was graded for fibrosis using the Ishak fibrosis staging system.

Results Four out of 34 patients with chronic viral hepatitis were excluded as two did not have elastography scores recorded and two did not have their liver histology graded for fibrosis. Of the patients who were included, 15 had chronic hepatitis B and 15 had chronic hepatitis C. The mean age of the patients was 40.0 years and the number of male patients was 24. The mean ARFI elastography score and mean Ishak staging were 1.59 and 1.63 respectively. A direct correlation was found between ARFI elastography measurements and Ishak staging (Spearman's rank correlation =0.31). The negative predictive value for fibrosis using ARFI elastography was 94%.

Conclusion A significant correlation between ARFI elastography measurements and liver histology is seen in this study carried out on consecutive unselected cases in a secondary care setting. ARFI elastography is an accurate non-invasive method of excluding liver fibrosis in patients with chronic viral hepatitis. The technology is widely applicable as the software can be integrated into a conventional ultrasound system and an elastography examination can be carried out during a routine screening ultrasound scan of the liver.

Viral hepatitis

P43 CELLULAR PROTEIN CYCLOPHILIN A IS INVOLVED IN HEPATITIS B VIRUS REPLICATION AND ITS INHIBITION WITH DEB025 (ALISPORIVIR) OR NIM811 DEMONSTRATES ANTIVIRAL ACTIVITY IN VITRO

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Introduction Cyclophilins are ubiquitously expressed intracellular proteins that have enzymatic activity—peptidyl-prolyl cis-trans isomerase, and are involved in regulation of mitochondrial/cytosolic transport in the cells. DEB025 (Alisporivir) and NIM811 are non-immunosuppressive cyclophilin inhibitors that efficiently block hepatitis C virus replication by targeting host rather than viral proteins, however the potential impact of cyclophillin inhibition on hepatitis B virus (HBV) life cycle is poorly understood.

Aim In the present study we employed a panel of liver cell lines to investigate the ability of cyclophilin inhibitors DEB025 (Alisporivir)