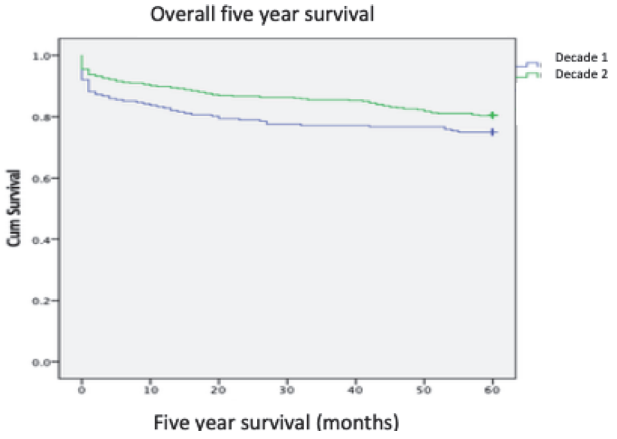


Abstract P171 Figure 1

Methods Data was obtained from the National Liver Transplant Registry and analysed using SPSS. Patients were divided into decade one (01/01/1994–31/12/2003) and decade two (01/01/2004–31/12/2013). Each patient was followed up for five years. Primary outcome was survival at five years.

We also created a subgroup analysis of emergency OLT and studied outcomes within this.

Results 704 transplants in total were performed over twenty years, 228 in the first decade and 476 in the second. We saw a trend towards improved survival outcome in the second decade [p 0.034] as five year survival increased from 74% to 81%, shown on Kaplan Meier curve below.

We found that we are performing more transplants for emergency indications than previously. Our numbers transplanted for acute liver failure increased from 40 in decade 1 to 53 in decade 2. Paracetamol overdose (POD) has become our commonest indication for emergency OLT [p0.004]. The five year survival for POD OLT has improved [p 0.005] from 17% to 83%.

Conclusions We have seen increases in the numbers of patients transplanted.

Long term survival following liver transplantation improved in Ireland 1994–2013. These improvements may be due to careful screening of prospective patients for comorbidities during OLT workup, and close monitoring post operatively for evidence of adverse effects of immunosuppression such as the metabolic syndrome, chronic kidney disease, and de novo malignancy.

Our outcomes in transplants for POD are significantly improving, this is most likely due to our increasing experience in terms of numbers transplanted, as shown in this study.

Overall across all indications for OLT our unit has shown an improvement in our five year survival and we are fully in line with international standards both in terms of numbers transplanted and outcomes (Annual report on Liver Transplantation 2016/2017. NHS Blood and Transplant).

P172 IDENTIFICATION OF PATIENTS WITH UNDIAGNOSED PRIMARY BILIARY CHOLANGITIS WITHIN CARDIFF AND VALE UNIVERSITY HEALTH BOARD

Alexander Berry*, Bradley Arms-Williams, Hasan Haboubi, Brijesh Srivastava. *Cardiff And Vale University Health Board, Cardiff, UK*

10.1136/gutjnl-2020-bsgcampus.247

Introduction Primary biliary cholangitis (PBC) is a chronic cholestatic liver disease that can eventually lead to liver cirrhosis and liver failure. Treatment with therapeutic doses of ursodeoxycholic acid (UDCA) improves liver related outcomes in majority of cases. Second line treatment options are also now available for those not responding to UDCA. The aim of this review is to identify patients with yet undiagnosed PBC in the Cardiff and Vale (CAV) population of 496,313 people with a positive anti-mitochondrial antibody (AMA) and cholestatic liver biochemistry, who are not under hepatology follow-up.

Methods Patients with a positive AMA titre (≥1:40) performed in CAV since 2001 were identified from local biochemistry records. Clinical portal results were used to identify AMA positive patients with an elevated alkaline phosphatase (ALP) or *gamma-glutamyl transferase (GGT) as likely having PBC. Engagement with hepatology/gastroenterology services was assessed via electronically available clinic letters and appointments recorded since 2001. Hepatology clinic review will be arranged for patients not under follow-up.*

Results 647 patients with a positive AMA titre were identified. 124 of these patients, who are alive, also had a recorded elevated ALP/GGT, thus likely having PBC. 36 (29%) patients were not under specialist follow-up. Male to female ratio in this sub-cohort was 1:2.5 with a median age of 63 years (23–94). Median highest ALP recorded was 241 u/L (157–694). 5 patients were being treated with UDCA initiated in primary care with a mean dose of 700 mg OD (not known if on optimum dose).

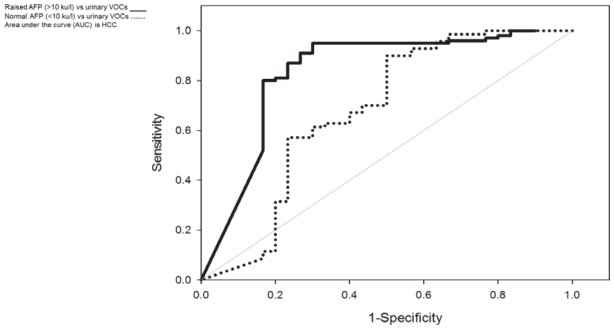
Conclusions Liver antibodies are routinely checked as part of an autoimmune screen. This study has found a potential cohort of people with probable PBC who are not known to hepatology services and may be at risk of progressive liver disease. These patients will be invited to clinic to accurately stage their disease and optimise medical management. The British Society of Gastroenterology strongly recommends lifelong follow-up for PBC patients. We would encourage other hepatology services to identify undiagnosed PBC patients using this approach, who would benefit from effective medical treatment.

P173 EXPLORATION OF THE USE OF URINARY VOLATILE ORGANIC COMPOUNDS IN COMPARISON TO ALPHA FETOPROTEIN

[1,2]Ayman Bannaga*, [3]Frank Kvasnik, [3]Krishna Persaud, [1,2]Ramesh Arasaradnam. *[1]University Hospital Coventry and Warwickshire NHS Trust, Coventry, UK; [2]Warwick Medical School, University of Warwick, Coventry, UK; [3]School of Chemical Engineering and Analytical Science, University of Manchester, Manchester, UK*

10.1136/gutjnl-2020-bsgcampus.248

Introduction Alpha fetoprotein (AFP) is no longer recommended by for routine use in hepatocellular carcinoma (HCC) surveillance. On the other hand, the analysis of volatile organic compounds (VOCs) is emerging in medical diagnostics for variety of diseases. VOCs are organic chemicals that can evaporate from liquid to gases. VOCs emerge from the cell membranes, following cellular damage, then find their way into the systemic circulation and finally excreted in the urine. Detection of urinary VOCs is of low cost (≤ £30/sample). We compared AFP to chemical signatures of the urinary VOCs in HCC patients.



Abstract P173 Figure 1

Methods Ethical approval was granted by Coventry and Warwickshire research ethics committee (09/H1211/38). We collected 5 mls of urine from 31 HCC cases from January to June 2019. Male to female ratio was 5:1 and mean age was 72 years. Urine samples were left to freeze within 2 hours to –80 oC. Analysis of the samples completed at the end of recruitment. Prior to analysis samples were left to thaw in a water bath at 50°C for 1 h. Urine was then placed into a Falcon conical centrifuge tube 50- mL with a modified cap with two slots to allow two solid phase microextraction tabs to be inserted to absorb gases from the head space of the samples. These tabs were analysed using an array of eight metal oxide gas sensors. Responses from the gas sensors to the urinary vapours were captured over a period of 180 seconds, then digitized and stored by computer software. The receiver operating characteristics (ROC) curves were calculated using established algorithm that was applied to different classes of data generated from an artificial radial basis function network (RBFN).

Results The sensitivity of AFP alone in our study for HCC detection was 54.8% (raised AFP >10 kU/L in only 17 cases). When comparing urinary VOCs to AFP, they showed good discrimination in diagnosis of HCC. The sensitivity for detection of HCC with normal AFP was 68% (ROC Curve Area was 0.68, SE 0.06, 95% CI 0.54 to 0.81 and P <0.005). The VOCs sensitivity in detection of HCC cases with raised AFP was 83%. (ROC Curve Area was 0.83, SE 0.05, 95% CI 0.73 to 0.93 and P<0.0001) as demonstrated in the figure 1 below.

Conclusion Urinary VOCs could have a potential role in screening and surveillance of HCC. It is an attractive tool because it is non-invasive and has a low cost. Further validation from studies with larger sample size is required.

P174 EXPLORATION OF URINARY PEPTIDES IN HEPATOCELLULAR CARCINOMA

[1,2]Ayman Bannaga*, [3]Jochen Metzger, [4]Torsten Voigtländer, [4]Michael Manns, [1,2]Ramesh Arasaradnam. *[1]University Hospital Coventry and Warwickshire NHS Trust, Coventry, UK; [2]Warwick Medical School, University of Warwick, Coventry, UK; [3]Mosaiques Diagnostics and Therapeutics AG, Hannover, Germany; [4]Hannover Medical School, Hannover, Germany*

10.1136/gutjnl-2020-bsgcampus.249

Introduction Hepatocellular carcinoma (HCC) is a frequent cause of death. HCC development is associated with liver inflammation, protein changes and fibrotic deposition. We investigated the low molecular weight urinary proteome in HCC to further advance our understanding of the disease.

Methods We recruited 51 cases from university hospital Coventry/UK and Hannover medical school/Germany from January 2013 to June 2019. Ethical approval was granted from the appropriate bodies and consent was obtained from all participants. There were 20 HCC cases on background of liver cirrhosis (mean age of 60 years, 3 females and 17 males) and 31 controls (mean age 59 years, 11 females and 20 males). The controls included 9 non-alcoholic fatty liver disease, 13 non-alcoholic steatohepatitis and 9 healthy controls. 5 mls of urine was collected from each participant and frozen to -80°C. Analysis of the urine samples was completed by applying capillary electrophoresis (CE) coupled to mass spectrometry (MS). CE-MS is a hybrid technology using capillary electrophoresis (CE) for separation and mass spectrometry (MS) for mass detection enabling multidimensional analyte detection in complex biofluids. Raw CE-MS data processing and normalization procedures for inter-sample analysis were completed using computer software. Peptide sequences were resolved by tandem-MS and proteases potentially involved in HCC progression were matched to the N- and C terminal sequence motifs of the CE-MS identified peptide markers for HCC by the online software tool Proteasix.

Results In silico protease prediction revealed that there were the following eight urinary proteases involved in the generation of the HCC-specific urinary peptide marker: Stromelysin-

Abstract P174 Table 1

Gene name	MEP1A	MMP3	CTSB	MMP13	GZMA	KLK6	CTSD	CTSE
Full name	Meprin A subunit alpha	Stromelysin-1	Cathepsin B	Collagenase 3	Granzyme A	Kallikrein-6	Cathepsin D	Cathepsin E
Avg. Cases	196.2	632.99	347.63	729.36	197.81	166.4	32.9	34.41
SD. Cases	93.1	317.56	173.67	402.76	155.3	79.87	33.44	31.99
Avg. Controls	365.6	393.63	643.77	495.03	330.32	67.09	17.35	22.56
SD. Controls	231.1	331.29	399.1	539.78	188.06	88.51	31.21	41.25
Fold change (Cases/Controls)	0.53	1.6	0.53	1.47	0.59	2.47	1.89	1.52
Regulation in HCC	Down	Up	Down	Up	Down	Up	Up	Up
Mann-Whitney test	P = 0,003	P = 0,006	P = 0,003	P = 0,01	P = 0,01	P < 0,0001	P = 0,015	P = 0,031