were 64.4 ± 11.9 years and 75.9 ± 15.4 kg respectively. The mean blood results for haemoglobin, platelets, bilirubin, ALP, alanine aminotransferase, and creatinine were 126.8 ± 15.0 g/L, $254.5 \pm 94.3 \times 10^9$ /L, 9.4 ± 4.3 μ mol/L, 144.4 ± 75.6 u/L, 30.3 ± 19.3 u/L, and 75.1 ± 28.3 μ mol/L respectively. The mean UDCA dose for the cohort was 13.9 ± 5.9 mg/kg/day. Biochemical failure was documented in 13 patients who had an ALP of greater than 1.67 times the ULN at the end of 1 year of therapy with UDCA (13.5%). Of these 13 patients, 4 were found to be on suboptimal dosage of UDCA (<10 mg/kg/day), leading to a true non-response rate in 9/96 subjects (9.4%).

Conclusions A substantial proportion of PBC patients were found to be biochemically unresponsive to UDCA. Shifting these patients to OCA would lead to significant drug expenditure for NHS Grampian. An intermediary step of shifting non-responsive patients to the cheaper drug, Bezafibrate, may prove to be cost-effective, but this drug has been revealed to have no benefit in a recent Cochrane review².

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PTU-036 SCREENING OF TYPE II DIABETIC PATIENTS FOR LIVER FIBROSIS WITH FIBROSCAN IN PRIMARY CARE

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10.1136/gutjnl-2019-BSGAbstracts.245

Introduction In 2016, European Association for the Study of the Liver (EASL) recommended the presence of non-alcoholic fatty liver disease (NAFLD) should be looked for in Type II diabetic patients as they are at high risk to develop liver fibrosis. Our prospective cohort study aims to examine the practicality of screening Type II diabetic patients for liver fibrosis and to compare different liver fibrosis scores.

Methods For a 10 weeks period, a hepatology specialist nurse from Aberdeen Royal Infirmary attended the Type II Diabetic Clinic at 3 general practices. Unselected patients at the clinics were given information leaflets before consenting for Fibroscan and blood testing. Different liver fibrosis scores including NAFLD fibrosis, Fibrosis-4 (FIB-4) and AST to Platelet Ratio Index (APRI) scores were calculated on the day of Fibroscan. Clinically significant fibrosis ($\geq F2$) was defined as liver stiffness measurement (LSM) > 7 kPa and advanced liver fibrosis/cirrhosis (F3 and F4) was defined as LSM > 12 kPa. Patients with LSM > 7 kPa were given lifestyle modification advices including diet, exercise and alcohol intake. Full 'liver screen' was performed for these patients and they were seen in the hepatology clinic with follow-up Fibroscan.

Results 49 patients (mean age: 67.6 ± 12.2 , mean BMI: 30.5 ± 6.4 and male: 55%) were recruited in the study after excluding 4 patients due to excess alcohol intake ($n=1$), known liver cirrhosis ($n=1$) and body habitus ($n=2$). 22/49 (45%) patients had LSM > 7 kPa. 12/14 (86%) patients who

had follow-up fibroscan had decreased LSM. 37/40 (93%) patients had a score > -1.455 which indicated indeterminate/advanced fibrosis scores based on previous studies. In our study, all liver fibrosis scores performed poorly at diagnosing clinically significant fibrosis (> 7 kPa): NAFLD score (AUROC=0.57), APRI score (AUROC=0.52) and FIB-4 score (AUROC=0.42). NAFLD score (AUROC=0.81) had the best diagnostic accuracy for advanced fibrosis (> 12 kPa) compared to APRI score (AUROC=0.76) and FIB-4 score (AUROC=0.73).

The best NAFLD Cut-off score for advanced fibrosis was ≥ 0.502 with a sensitivity of 100% and specificity of 54%.

Conclusions In this small cohort study, there was a high prevalence of indeterminate/advanced NAFLD fibrosis scores in unselected type II diabetic patients. This strategy could lead to significant number of hepatology referrals to hospitals if used as a screening test. The NAFLD score was the best performing panel for advanced fibrosis in this cohort. Lifestyle modification advice given by the hepatology specialist nurse led to significant improvement in patients' repeat liver stiffness measurements.

PTU-037 FONTAN ASSOCIATED LIVER DISEASE – EARLY EXPERIENCE AND INSIGHTS FROM LIVER SCREENING

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10.1136/gutjnl-2019-BSGAbstracts.246

Introduction There is growing recognition of Fontan-associated liver disease (FALD), which encompasses a spectrum ranging from liver congestion to cirrhosis and hepatocellular carcinoma. Diagnostic pathways remain poorly defined, with no consensus on optimal screening and management modalities. Aim of this study was to assess prevalence and severity of FALD by implementation of a structured screening programme.

Methods A cohort of 93 Fontan patients aged ≥ 16 years underwent a screening protocol for liver disease at our tertiary Adult Congenital Heart Disease Centre, including blood tests, liver ultrasound with elastography, and fibroscan. Results were discussed in a MDM and patients categorised according to the risk of having liver fibrosis. MRI, CT scan and/or endoscopy were also organised when appropriate. Patients were followed up yearly if the initial tests were reassuring, or started on 6-monthly HCC surveillance if the initial screening suggested advanced fibrosis.

Results The study cohort comprised 55 (59%) males, mean age 25.4 ± 6.2 years, and median 18 years since Fontan surgery. Most patients were asymptomatic (79%), with good haemodynamics. Liver abnormalities on ultrasonography were evident in 51% (41 of 80 scans), including coarse echotexture (41%), hepatomegaly (12%), hyper-echoic nodules (6%) and signs of portal hypertension (15%). Liver stiffness was elevated on both ultrasound elastography (mean 7.8 ± 3.3 kPa, Philips US ElastPQ) and fibroscan (median 20.0 ± 6.7 kPa). Liver MRIs and triple phase liver CTs, performed in a subset of the cohort, further characterised liver abnormalities, most notably focal nodular hyperplasia (FNH) in 65% (13 of 20 MRIs).

Most patients had normal biochemical liver profiles, with mean values for bilirubin $18.2 \pm 10.6 \mu\text{mol/L}$, ALT $26.5 \pm 10.6 \text{ IU/L}$, albumin $47.5 \pm 5.3 \text{ g/L}$ and platelets $169 \pm 55 \times 10^9$, despite hepatic imaging of parenchymal abnormalities. Two patients were found to have hepatocellular carcinomas (HCC), BCLC stage B and C at diagnosis. There was a total of 4 deaths over a median follow-up of 2.8 years, of which 2 deaths were liver-related.

Conclusions Elevated hepatic stiffness and ultrasound appearance in keeping with severe fibrosis are common in adult Fontan patients, despite normal liver enzymes and synthetic function. FNH is the most common abnormality on imaging in high risk patients. The incidence of HCC justifies surveillance in this group of patients, however the optimal surveillance protocol remains to be established.

PTU-038 END OF LIFE CARE PLANNING IN PATIENTS WITH END-STAGE LIVER DISEASE: CLINICAL PRACTICE REMAINS VARIABLE

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10.1136/gutjnl-2019-BSGAbstracts.247

Introduction End-stage liver disease (ESLD) is a terminal diagnosis without transplantation, and anticipatory discussions regarding end of life (EoL) care are appropriate when poor prognostic factors are present.

Aim To assess the point at which decisions regarding resuscitation and EoL care were made with patients who died of ESLD and to analyse factors associated with delayed discussion.

Methods We identified inpatients with proven ESLD under the care of a hepatology team over a 24 month period (Jan 2017-Dec 2018) who died during or shortly after their last admission. Data was collected relating to clinical course, prognostic indicators, EoL care planning considerations, dates of DNACPR decision, palliative care referral and interval to death.

Results 19 patients were identified (12 male: 7 female); mean age at death was 61. 11/19 patients had alcoholic liver disease (ALD), 5 had ALD/Hepatitis C. 12 patients died on the ward, 3 in ICU, 2 at home and 2 at a nursing home. Child-Pugh Scores (CPS) ranged from B-6 to C-13 and average MELD score was 23 (range 8–38). None were eligible for transplantation: 12 due to active alcohol use, 3 due to co-morbidities, 1 malignancy, 2 unknown. Median number of admissions in the year preceding death was 2 (range 0–5). Predominant symptoms prior to death were respiratory distress, confusion and pain. Average interval between admission and death was 24 days. 13/19 patients were referred for inpatient palliative care input. Although all patients had a DNACPR notice in place, the average DNACPR-to-death interval was just 20 days (range 0–139 days). EoL decisions were made 'early' (DNACPR-to-death time >21 days) in patients (n=6) who had gradual disease evolution and/or a long period of contact with the service. In those with 'short' DNACPR-to-death times (n=13), 9 had been hospitalised 2 or more times in the year prior to death (this being a known marker of poor prognosis), and 2

had been admitted 4 or 5 times. 5/19 patients had a documented Amber Care Bundle referral (prognostic uncertainty tool). 14 patients had a documented ceiling of care discussion; of these 12 were for ward-based care only and 2 were for Level 3 escalation.

Conclusions Patients with end stage liver disease continue to be engaged in EoL and treatment escalation discussions relatively late, despite clear indicators of poor prognosis (including recurrent admissions and non-transplantable status) within the previous year. Those well known to specialist teams who deteriorate gradually have a greater chance of expressing their preferences. Increased awareness of poor prognostic features is required in the secondary care setting.

PTU-039 THE COST-EFFECTIVENESS OF HEPATITIS B AND C TESTING IN EMERGENCY DEPARTMENTS IN THE UK

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10.1136/gutjnl-2019-BSGAbstracts.248

Introduction The prevalence of blood borne viruses is higher in emergency department (ED) attendees compared to the general population, due to higher attendance of marginalised populations. Studies have found prevalence up to 2% and 3% for hepatitis B (HBV) and hepatitis C (HCV) in EDs in England. HIV testing in EDs in the UK is recommended in high prevalence areas ($\geq 0.2\%$), but there is no defined threshold for hepatitis testing.

Methods A Markov model was developed to analyse the impact of opt-out hepatitis C (HCV) and hepatitis B (HBV) testing in EDs in the UK. The model used data from studies of ED testing in the UK to parameterise test costs and intervention effects (contact rates and linkage to care). For HCV we used an antibody test cost of £3.64 and RNA test cost of £68.38, and assumed a direct acting antiviral (DAA) treatment cost of £10,000. For HBV, we used a HBsAg test cost of £3.51. We considered what prevalence of HCV (RNA-positive) and HBV (HBsAg) would be required to make ED testing

Abstract PTU-039 Figure 1