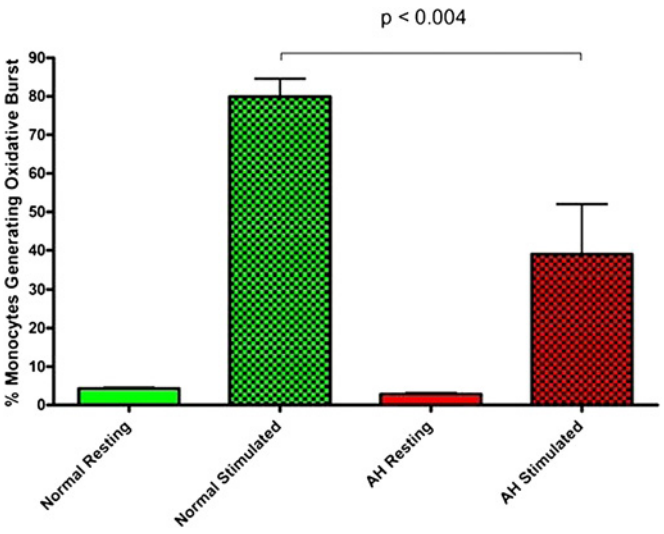
(77% vs 87%; p<0.03) but this was not a result of complement deficiency as phagocytosis did not depend on whether the bacteria were opsonised or not (73% vs 80%; p=0.9). The proportion of monocytes capable of generating an oxidative killing burst in response to phagocytosed *E coli* was markedly reduced (84% vs 47%; p<0.004) in AH patients compared to HC [Abstract PTU-016a figure 1]. Antigen presentation was also impaired: classical monocytes had significantly lower HLA-DR expression in AH compared to controls (73% vs 35%; p=0.002), with similar levels of HLA-DR expression detected in the CD14+CD16+ monocyte subset (94% vs 74%; p=0.4).



Abstract PTU-016a Figure 1

Conclusion It appears that there are a number of functional defects in circulating monocytes in patients with AH. The marked impairment of phagocytosis and intracellular killing may contribute to the increased susceptibility to infection in this group of patients.

Competing interests None declared.

General Liver I

PTU-017 IGG4 +VE AUTOIMMUNE HEPATITIS IS NOT OBSERVED AMONG PATIENTS OF NON-ASIAN ORIGIN

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Introduction IgG4 mediated autoimmune disease has recently been described in relation to pancreatitis and sclerosing cholangitis. Furthermore recent reports, mainly from Japan, have also identified cases of autoimmune hepatitis (AIH) in which an IgG4 positive hepatic inflammatory infiltrate predominates.

Methods We set out to establish the frequency with which IgG4 +ve plasma cells are observed in a cohort of patients with AIH without pancreatitis or sclerosing cholangitis. Immuno-histochemical analysis via application of a monoclonal antibody to IgG4 was undertaken on archived liver tissue specimens. Three fields per biopsy specimen were analysed and the number of IgG4+ve plasma cells per high powered field (HPF) and the proportion of these as a total of the plasma cell infiltrate were recorded. As per recent publications[1 2] a biopsy specimen was determined to be IgG4 +ve if more than 10 IgG4 +ve plasma cells were seen per high powered filed (HPF) AND where this number equated to >40% of the total plasma cell infiltrate. Immunohistochemical and histopathological analysis was undertaken by a single, experienced, hepato-pathologist (YZ).

Results Sixty-three liver tissue specimens underwent immunohistochemical analysis. These specimens derived from 53 Caucasian and 10 Afro-Caribbean patients. All patients met the revised International Autoimmune Hepatitis Group diagnostic criteria for probable or definite AIH. The median age of patients at diagnosis was 31 years and 78% were female. Among this cohort 44 patients presented with chronic disease and histological evidence of chronic active hepatitis while 19 presented with acute disease in whom histology demonstrated hepatic collapse in 16 and severe lobular hepatitis in three patients. Only 7 of 63 samples (11%) demonstrated >10 IgG4 +ve cells/HPF. While there was a greater number of biopsy specimens with >10 IgG4 +ve plasma cells per HPF in acute vs chronic presentations this did not reach statistical significance (16% vs 9%, p=0.44). Additionally, there was no difference in the frequency of this finding between males and females (males 21% females 8% p=0.4) or between different ethnic groups (11% in Caucasians vs 10% in Afro-Caribbeans, p=0.99). Importantly, in none of the seven cases in which >10 IgG4 +ve plasma cells/HPF were noted did the proportion of IgG4 +ve plasma cells equate to >40% of the total plasma cell infiltrate.

Conclusion While a small proportion of non-Asian AIH patients demonstrate >10 IgG4 +ve plasma cells/HPF, in no individual did this represent >40% of the total hepatic plasma cell infiltrate. Consequently, significant IgG4 +ve plasma cell infiltrates are not observed among non-Asian patients with AIH presenting to our institution.

Competing interests None declared.

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PTU-018 CYSTATIN C AND PROTEIN: CREATININE RATIO; POTENTIAL PREDICTORS OF EARLY ACUTE KIDNEY INJURY, RENAL REPLACEMENT THERAPY AND IN-HOSPITAL DEATH IN PATIENTS WITH CIRRHOSIS

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Introduction Acute kidney injury (AKI) is common, but difficult to predict in patients with cirrhosis as lower baseline serum creatinine can mask significant chronic kidney dysfunction. Cystatin C is a biomarker of glomerular filtration rate (GFR), which may overcome this weakness. Quantifying proteinuria using the widely available protein:creatinine ratio (PCR) may better the degree of structural glomerular damage.

Methods 34 patients with cirrhosis and mean (SD) age 51 (14) years and, median (range) Child-Pugh Turcotte (CPT) score 11 (9–11) were prospectively assessed for 10 days or until AKI, developed. Baseline iohexol clearance was performed to calculate GFR and urine underwent PCR analysis. Daily urine and serum samples were collected for determination of novel serum and urine biomarkers of kidney injury, including Cystatin C. Biomarkers were assessed by area under the receiver operating curve (AUROC) for predicting AKI stage 1, renal replacement therapy (RRT) and death.

Results 16 (47%) patients developed AKI defined by an increase of >26.4 umol/l from baseline serum creatinine (median 73 range (37–120 umol/l)). Estimated GFR overestimated GFR with median eGFR 95 (47–181) ml/min/1.73 m^2 compared to a median iohexol

derived GFR of 55 (20–115) mL/min/1.73 m^2, p<0.0001. Median PCR was 55 (36–189) compared to 17 (13–29) in the AKI and Non-AKI groups, p<0.0005. Liver disease severity scores were not significantly different between AKI groups for both CTP (p=0.86) or model for end-stage liver disease (MELD, p=0.14). Plasma cystatin C at 48 h prior to AKI predicted its subsequent development with an AUROC of 0.82 (sensitivity 86%, specificity 75%, p=0.004, cut off 1.18 mg/l). A random urine PCR of >30 predicted AKI during that hospital admission with an AUROC of 0.72 (sensitivity, 77%, specificity 63%, p=0.001). Plasma cystatin C at 48 h prior to AKI predicted death with an AUROC of 0.88 (sensitivity 100%, specificity 76%, p≤0.0001, cut off 1.18 mg/l). PCR >49 predicted the need for RRT with an AUROC of 0.85 (sensitivity 73%, specificity 86%, p≤0.0001).

Conclusion Estimated GFR using serum creatinine based equations overestimates GFR, therefore an accurate assessment requires a gold standard measure, like iohexol, in patients with advanced liver disease. Cystatin C and the widely available urine PCR measurement can be used to assess the risk of AKI. They both demonstrate potential for predicting AKI 48 h prior to onset, the need for RRT and hospital survival.

Competing interests None declared.

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PTU-019 METHADONE USE IS ASSOCIATED WITH THE DEVELOPMENT OF COMMON BILE DUCT DILATATION AMONG PATIENTS WITH HEPATITIS C: RESULTS OF A RETROSPECTIVE COHORT STUDY

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Introduction The synthetic opioid Methadone is widely used in the treatment of opioid dependence. Opioids are known to induce spasm of the sphincter of Oddi, increase common bile duct (CBD) pressures and induce bile duct dilatation. A prior study has shown methadone use to be associated with asymptomatic CBD dilatation among patients with viral hepatitis. We aimed to examine the prevalence of CBD dilatation among methadone users with hepatitis C (HCV) at first attendance and subsequent liver clinic follow-up, in comparison with a control group.

Methods Patients with chronic HCV attending our institution between 2003 and 2010 were identified from the Scottish HCV Database. Age, gender, methadone use, and CBD dilatation (≥8 mm) identified on initial and follow-up abdominal ultrasound scan (AUS) were recorded. Statistical analysis was performed using SPSS to compare methadone users, vs a control group not on methadone.

Results 618 patients were identified, 316 (51.1%) on methadone and 302 (48.9%) not. Mean age (42.3 vs 48.5, p=0.99) and gender (71.5% male vs 69.2%, p=0.53) were similar in the methadone group vs controls. CBD dilatation on initial AUS was significantly higher among the methadone group (47/316 (14.9%) vs 18/302 (6%), p=0.0003). Post cholecystectomy CBD dilatation was uncommon (4/47 (8.5%) vs 3/18 (16.6%), p=0.38). Of those with a normal initial CBD, 111/269 (41.3%) methadone patients and 115/284 (40.5%) controls had an interval scan. Over similar durations of follow-up (38.1 months vs 45 months controls, p=0.53), methadone use was associated with increased de-novo CBD dilatation (15/111 (13.5%) vs 6/115 (5.2%), p=0.03). Rates of subsequent biliary investigation (MRCP/ERCP) were low (12/62 (19.3%) and 7/24 (29.2%). An obstructive cause of biliary dilatation was infrequently found among methadone receiving patients and controls (1/12 (8.3%) vs 1/7 (14.3%), p=0.49). No obstructive biliary pathology was found among patients with normal alkaline phosphatase (ALP) in either group.

Conclusion Our study confirms the association between methadone use and CBD dilatation among patients referred for assessment of HCV. For the first time we have demonstrated an increased rate of new CBD dilatation among methadone users on longitudinal follow-up. Given that one in five patients on methadone demonstrated CBD dilatation during initial assessment or follow-up, with no alternate cause identified among those with a normal ALP, further investigation of these patients may not be necessary. Further work is required to establish and validate algorithms identifying those patients receiving methadone with CBD dilatation in whom further investigation can be safely omitted.

Competing interests None declared.

PTU-020 RIFAXAMIN IS A HIGHLY EFFICACIOUS TREATMENT FOR THE PARKINSONIAN PHENOTYPE OF HEPATIC ENCEPHALOPATHY (HE)

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Introduction Patients who develop Parkinsonian symptoms on a background of cirrhosis and portosystemic shunting (PSS) form a unique subset of so-called acquired hepatocerebral degeneration. The syndrome is entirely different from acute HE and other forms of Parkinsonism that develop in patients without liver disease and rarely responds to standard treatments for HE. Rifaxamin is a non-absorbable antibiotic which has recently been shown to be efficacious in the secondary prevention of recurrent HE and is postulated to decrease gut ammonia production and/or bacterial translocation.

Methods To prospectively evaluate the efficacy of rifaxamin 600 mg twice daily in three patients referred to the HE clinic at our institution with advanced cirrhosis, evidence of PSS and debilitating HE with extrapyramidal symptoms including resting tremor, bradykinesia, cog-wheel rigidity, drooling, loss of facial expression, shuffling gait and excessive somnolence. Each patient was evaluated independently by a hepatologist and a neurologist. Neuropsychological function testing (Trails A and B test), random venous ammonia (NH_3), EEG and MRI brain/DaTscan were performed pre- and 4 weeks post rifaxamin.

Results Patient 1 [male, age 61, α1AT, NH_3 76 μmol/l] was unable to complete Trails A/B test at baseline. On rifaxamin his severe bradykinetic rigidity syndrome, drooling and leaning to one side on walking resolved. His repeat Trails B test was in 75–90th centile for a normal healthy age-matched population. His symptoms improved further on long acting dopamine therapy. Patient 2 [female, age 64, alcohol, abstinent, NH_3 67 μmol/l] had an improved Trails A from the 10th to 50th centile, with resolution of bradykinesia, resting tremor and a dramatic reduction in her somnolence. Patient 3 [male, age 66, alcohol, abstinent, NH_3 67 μmol/l] had remarkable improvement in his asymmetric bradykinetic rigid syndrome, regained his facial expression and was mobile with assistance whereas previously he had required hoisting. None of the patients had any improvement in their ammonia level or EEG with rifaximin despite resolution of symptoms. In the first two patients MRI brain post rifaxamin showed no change (high T1 signal in the globus pallidus) and in patient 3 a DaTscan post rifaxamin still showed decreased uptake in the right corpus striatum, in spite of dramatic clinical improvements. Patient 1 has now been transplanted and his