	BL PLT ($\times10^9$/l)	PreOp PLT ($\times10^9$/l)	4 wk PostOp ($\times10^9$/l)	Mean Chg BL to PreOp ($\times10^9$/l)	Mean Chg PreOp to 4 wk PostOp ($\times10^9$/l)	Mean Chg BL to 4 wk PostOp ($\times10^9$/l)	Cost (WAC)
PLT TRF	56.9*	183.8	85.9	126.8	−97.9	28.9	$7500
Romiprostim	58.7*	232†	366.2‡	173.3†	192.9‡	307.5‡	$2284
Elthrombopag	54.5*	189.9*	173.6§	135.4*	−16.3§	119.1§	$2991

*p=ND vs PLT.
†p<0.05 vs PLT TRF and Elthrombopag.
‡p<0.001 vs PLT TRF and Elthrombopag.
§p<0.001 vs PLT TRF.

Romiplostim, a fusion protein TPO, is a hormone that regulates platelet production approved in idiopathic thrombocytopenic purpura (ITP). This study evaluates single use of Romiplostim 2 week prior to liver biopsy to avoid biopsy related morbidity and mortality.

Methods 65 patients (n=65), (mean age: 56 years; M:F-2:1) with Hepatitis C: 37/65 (57%); hepatitis B (HBV) 7 (15.5%), Alcoholic Cirrhosis 10 (15%); Non-Alcoholic steato-hepatits (NASH) 3 (5%), Primary biliary cirrhosis (PBC) 6 (9%) with pre-biopsy mean platelet count 77k; Mean MELD score 20, mode fibrotic score F4 were randomised in blinded fashion into three groups: Group A (n=18), received seven units of platelet transfusion at night for the morning procedure. Group B (n=23) received Romiplostim 500 μg sc given 2 weeks prior to the procedure, and Group C (n=24) Elthrombopag orally 75 mg/day for 2 weeks. PLT-CT was repeated 2 h prior and Post-biopsy in 4 weeks in all groups. Inclusion criteria: CLD with thrombocytopaenia.

Results

Conclusion This pilot study demonstrates that single use of Romiplostim is efficacious, cost-effective, and safe without side effects for liver biopsy with severe thrombocytopaenia. Single use of Romiplostim should be considered before Trans jugular intra-hepatic porto-systemic shunts or portal haemodynamic procedures and prior to surgical interventions with severe thrombocytopaenia. A large randomised clinical trial is needed for further validation.

Competing interests None declared.

PTU-014 LEVELS OF CARE AND OUTCOMES IN DECOMPENSATED CIRRHOSIS: A DESCRIPTIVE STUDY

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Introduction As hospital admissions due to decompensated cirrhosis increase it is important to characterise the severity of disease and establish "best practice" in secondary care units. While many studies have reported on patients in the ITU setting, we have expanded this evaluation to explore patient outcome according to level of in-patient care provided; ward (level 0–1), medical HDU (2) or ICU (3).

Methods Prospective analysis of consecutive decompensated cirrhosis patients admitted to the liver service of a district general hospital between November 2010 and November 2011).

Results 66 patients accounted for 153 separate presentations. ALD accounted for 54 patients (78%). Of those with ALD 24 (44%) were a first presentation, 22 (41%) continued to drink against advice and eight were abstinent. Alcoholic hepatitis (AH) was diagnosed in 24, with median discriminant function (DF) of 49. 16 (23%) were admitted to ICU (multiple organ failure 12, variceal bleeding without organ failure 4). 88% were mechanically ventilated, 81% received inotropic support and 56% haemofiltration. 14 (20%) were admitted to medical HDU and the 36 (61%) remained on the ward. Median MELD and UKELD scores were not significantly different between groups; ITU 16 and 57, HDU 20 and 58, Ward 13 and 55 respectively. Overall median length of stay was 11.5 days. LOS was highest in HDU patients (23 d vs ward 11 d and ITU 17 d, p=0.04). In-hospital mortality was 5% in ward patients, 14% in HDU patients and 36% in ITU patients (p=0.01), with 90-day mortality rising to 8%, 21% and 50% respectively. Six patients with extra-hepatic organ dysfunction received a "ceiling of care" decision, whereby active treatment on HDU was offered but organ support on ICU was not; these patients did not differ from ICU patients in terms of age, active drinking, liver failure scores or SOFA score. The natural history of these patients was characterised by rising MELD despite optimum therapy and late development of extra-hepatic organ dysfunction (median period from admission 17 d vs 1 d, p=NS). All six died.

Conclusion This cohort of cirrhotic patients displayed evidence of advanced liver disease. Median UKELD in ward patients was above the limit required for consideration of liver transplant and median DF indicated a high risk of death in those diagnosed with AH. Prolonged hospital stays and ward based convalescence were required, especially in those escalated to HDU, but mortality was lower than that commonly perceived for this patient cohort. Patients who are not offered advanced organ support are identified after gradual deterioration despite optimal ward care. We propose the concept of a "medical HDU" model where hepatologists are able to escalate levels of care locally before the onset of organ dysfunction.

Competing interests None declared.

PTU-015 EXPANDED CD14HI/CD16+ MONOCYTES IN ACUTE LIVER INJURY (ALI): ANGELS OR DEMONS?

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Introduction CD14hi/CD16+ monocytes resemble tissue macrophages and normally constitute ~5% of circulating monocytes. Expansion of CD14hi/CD16+ monocytes has been implicated in the perpetuation of liver injury and hepatic fibrosis in chronic liver disease. We therefore wanted to explore whether CD14hi/CD16+ monocytes are implicated in ALI; show features of activated endothelial adhesion (CD11b) and chemotaxis (CCR5); and phenotypically resemble classically activated "M1" or alternatively activated "M2" macrophages. "M1" macrophages secrete pro-inflammatory cytokines, express high levels of HLA-DR and CD86 and are implicated in tissue damage. "M2" macrophages, are immunoregulatory, express scavenger receptors such as CD163 and are involved in tissue repair.

Methods Blood was sampled from patients within 24–48 h of admission consisting of 33 hyper-Acute Liver Failure (hyperALF:

jaundice to encephalopathy <7 days), 8 Subacute/Acute Liver Failure (S/ALF: jaundice to encephalopathy >7 days), and 18 healthy controls (HC). Flow cytometery was performed to investigate monocyte phenotype (CD14, CD16, HLA-DR, CD86, CD163, CD11b and CCR5).

Results Compared to HC, total monocyte count was elevated in S/ALF, but reduced in hyperALF ($p<0.001$), while CD14hi/CD16+ monocytes were expanded in percentage of total monocytes and absolute numbers in S/ALF (17.4%; 0.14) compared to HC (4%; 0.014) ($p<0.001$). Although the percentage of CD14hi/CD16+ monocytes in hyperALF was higher (5.6%, $p<0.01$), the absolute number (0.013) was similar to HC. Though all CD14hi/CD16+ monocytes expressed HLA-DR, the Mean Fluorescence Intensity (MFI) was reduced compared to HC (<0.001). HyperALF CD14hi/CD16+ monocytes had lower HLA-DR MFI compared to S/ALF ($p<0.001$). A similar pattern was seen for CD86 expression ($p<0.01$). CD14hi/CD16+ monocytes showed increased expression of CD163 in hyperALF but not in S/ALF compared to HC (<0.01). Compared to HC, CD11b and CCR5 were up-regulated in all ALF groups ($p<0.001$).

Conclusion We have demonstrated an expansion of CD14hi/CD16+ monocytes in ALI with an activated phenotype for adhesion and migration. CD14hi/CD16+ monocytes phenotypically resemble M1 macrophages in S\ALF, possibly reflecting a pathogenic role in the perpetuation of liver injury, while they resemble M2 in hyperALF and may be instrumental to the resolution of liver injury. This distinction requires further investigation should therapeutic strategies to target monocyte migration be attempted.

Competing interests None declared.

PTU-016 ALBUMIN RESTORES RENAL BLOOD FLOW (RBF) AUTOREGULATION IN PATIENTS WITH REFRACTORY ASCITES AND ACUTE-ON-CHRONIC LIVER FAILURE (ACLF) THROUGH STABILISATION OF ENDOTHELIAL FUNCTION

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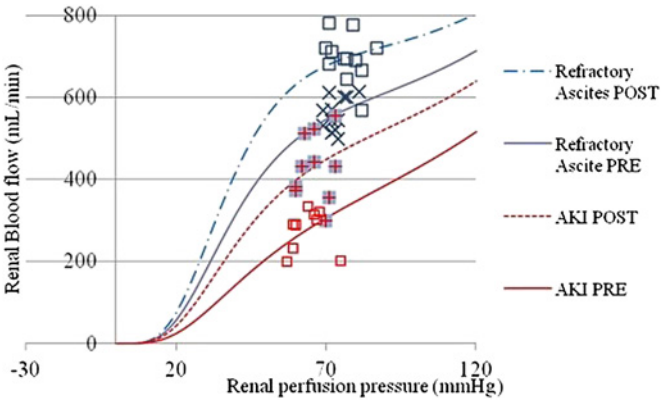
Introduction Haemodynamic alterations in liver failure are associated with endothelial dysfunction, a pro-inflammatory state and sympathetic activation which lead to disturbed RBF autoregulation and renal failure. Albumin is a multifunctional protein that has been shown in several studies to prevent and treat renal dysfunction in patients with advanced cirrhosis and liver failure. We hypothesised that the beneficial effects of albumin in cirrhosis is likely to be through mechanisms in addition to volume expansion. The aims of the study were to investigate the effects of albumin on systemic and renal haemodynamics, inflammation and endothelial dysfunction in refractory ascites and patients with acute kidney injury (AKI) in the setting of ACLF.

Methods Twenty-two patients were recruited [Group 1, n=12, refractory ascites; Group 2, n=10 patients with AKI admitted with an acute deterioration of their liver function due to either alcoholic hepatitis or infection]. Both groups were treated with Albumin 60 g/d over 3–4 days. Cardiac output (CO) and renal blood flow (RBF) haemodynamics were measured. Endothelial dysfunction was assessed through measurement of von Willebrand factor (vWF) and serum nitrite (NO) levels. F2α Isoprostanes (F2α), resting neutrophil burst and Interleukin (IL)-6 were quantified as markers of oxidative stress, endotoxemia and inflammation respectively.

Results Albumin therapy was associated with significant improvements in haemodynamic parameters (increased RBF, MAP, decreased CO, HR; $p<0.05$) which resulted in a shift in the RBF autoregulation curve towards normalisation (Abstract PTU-016 figure 1). In parallel, improvement of renal dysfunction (creatinine, creatinine clearance and Na+ excretion; $p<0.05$ each), sympathetic activation (noradrenaline levels; $p<0.01$), inflammation/oxidative stress (F2α and neutrophil burst; $p<0.05$), endothelial dysfunction (vWF and NO metabolism $p<0.05$) and the functional capacity of albumin (IMAR $p<0.005$) was observed. Restoration of RBF correlated inversely with change in vWF ($r^2=0.55$, $p<0.001$).



Abstract PTU-016 Figure 1

Conclusion This study suggests that albumin infusion improves albumin function which has pleiotropic effects and results in a reduction in inflammation and improvement in endothelial function leading to improved systemic haemodynamics and renal blood flow autoregulation.

Competing interests None declared.

PTU-016a FUNCTIONAL DEFECTS IN CIRCULATING MONOCYTES MAY CONTRIBUTE TO SUSCEPTIBILITY TO INFECTION IN ALCOHOLIC HEPATITIS

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Introduction Infection is common in patients with severe alcoholic hepatitis (AH) and a significant contributor to mortality. Monocytes play an important role in bacterial elimination by phagocytosis, using intracellular oxidative killing and antigen presentation. Our study sought to evaluate monocyte phagocytosis and scavenger receptor expression in AH.

Methods Monocytes were collected from 14 patients with AH (DF >31, prior to treatment) and 22 healthy controls (HC). Using FACS, monoclonal antibodies to scavenger receptors (CD36, -64, -163, -206, DCIR) and HLA-DR were used for immunophenotyping. Subsequently, ex-vivo monocyte phagocytosis and oxidative burst activity was assessed using FITC-labelled opsonised and non-opsonised *Escherichia coli*.

Results The expression of scavenger receptors was deranged. In CD14+CD16- (classical) monocytes, CD163 MFI was reduced in AH compared to controls (587 vs 403; $p=0.05$). CD36, -206 and DCIR expression was similar between HC and AH patients but CD64 MFI was raised (6002 vs 12599; $p<0.001$). The proportion of monocytes phagocytosing *E coli* was lower in AH compared to HC