PTU-130 REGULATORY T CELLS IN ACUTE LIVER FAILURE ARE FUNCTIONALLY INTACT AND MAY CONTRIBUTE TO RETENTION OF NEUTROPHILS IN AREAS OF HEPATIC NECROSIS

[1]R Chudasama*, [1]Y-Y Chen, [1]H Jeffery, [1]C Thomas, [2]N Murphy, [2]T Whitehouse, [1]DH Adams, [1]YH Oo. *[1]Centre for Liver Research and NIHR BRU, University of Birmingham, UK; [2]Intensive Care Unit, UHB NHS Foundation Trust, Birmingham, UK*

10.1136/gutjnl-2014-307263.204

Introduction Acute liver failure (ALF) is a sterile inflammation with a high mortality. The immunological response to acute liver injury is initiated by the infiltration of innate neutrophils and is followed by an adaptive T cells response. T cells in drug induced skin lesions have been shown to express neutrophil chemoattractant and there is also evidence that regulatory T cells (Tregs) in peripheral blood secrete IL-8. However, little is known on the ability of liver infiltrating T cell subsets to retain neutrophils in ALF or the function of Tregs. Our aim is to investigate the phenotypic features and cytokine profiles of circulating and liver infiltrating T cell subsets from ALF patients with a view of assessing their functional ability to retain neutrophils.
Methods Distribution and localisation of Liver infiltrating lymphocytes and neutrophils were assessed by immunohistochemistry. Peripheral blood and liver infiltrating lymphocytes were isolated from ALF patients. Intracellular-cytokines expression profiles of the lymphocytes subsets were assessed by flow cytometry. Functional status of T cells including Tregs was assessed by pSTAT5 signalling.
Results Immunohistochemistry revealed high numbers of neutrophils in ALF compared to chronic diseased livers (109 ± 12.2 vs. 7.1 ± 2.67; p = 0.01) and normal liver (109 ± 12.2 vs. 0.8 ± 0.33; p = 0.0002). Dual immunohistochemistry showed co-localisation of lymphocytes and neutrophils in areas of hepatic necrosis. Neutrophil chemoattractant IL-8 expression in peripheral blood was higher in lymphocyte subsets of ALF patients compared to normal donor, CD3 (2.3 ± 0.54% vs. 0.93 ± 0.4%; p = 0.23), CD4 (2.8 ± 2.2% vs. 1.1 ± 0.7%; p = 0.41), CD8 (2.2 ± 1% vs. 0.61 ± 0.09%; p = 0.43) and Treg (0.8 ± 0.4% vs. 0.2 ± 0.02%; p = 0.48). There was an up-regulation of IL-8 production in Tregs after 7 days of *ex vivo* expansion compared to day zero (1.63 ± 1% vs. 0.77 ± 0.42%; p = 0.44). IFN-γ expression in ALF peripheral blood compared with normal blood was (23.1 ± 6.2% vs. 11.1 ± 8.4%; p = 0.38) for CD3 (11.72 ± 2.3% vs. 7.8 ± 6.26; p = 0.5) for CD4 and (14.21 ± 3.04 vs. 9.95 ± 8.44; p = 0.58) for CD8 after day seven of *ex vivo* expression. Importantly, Tregs from both blood and explanted liver of ALF were functional indicated by STAT5 phosphorylation in response to IL-2.
Conclusion We demonstrated for the first time that lymphocyte subsets including Tregs in ALF produce IL-8, which may contribute to the retention of neutrophils in areas of hepatic necrosis in ALF. We also showed that Tregs and other T cells are functionally responsive to IL-2 in both blood and explanted liver tissue of ALF patients.
Disclosure of Interest None Declared.

PTU-131 PREVALENCE OF ABNORMAL LIVER FUNCTIONS TESTS (LFTS) IN OBSTRUCTIVE SLEEP APNEA (OSA) PATIENTS AND CHANGE IN LFTS AFTER CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) THERAPY

[1,2]R Haider*, [2]HJ O'Connor, [2,3]M Azam. *[1]Gastroenterology, TAGG, Dublin; [2]Gastroenterology, Naas Hospital, Naas, Ireland; [3]Gastroenterology, Sunderland Royal Hospital, Sunderland, UK*

10.1136/gutjnl-2014-307263.205

Introduction Obstructive Sleep Apnea (OSA) is a recurrent obstruction of the upper airways during sleep leading to intermittent hypoxia (IH). OSA is associated with metabolic syndrome and with non-alcoholic fatty liver disease with abnormal liver function tests (LFTs).
Aims We looked at prevalence of abnormal LFTs in OSA patients and effects of CPAP therapy on LFTs.
Methods In this retrospective study we did chart review of 100 patients of OSA who were commenced on CPAP from 2008 to 2013. We noted their age, body mass index (BMI), alcohol intake status, LFTs 3–18 months before and after CPAP therapy, ultrasound findings and their cholesterol levels.
Results Patient's were in the age group of 38–82 with average (ave) age of 57.5 years. There were 24% Women and 76% were men. Ave BMI was 36.4. Epworth S improved from 12.7 to 5.2 after CPAP therapy. Apnea Hypopnea Index improved from 36.17 to 4.52. A total of 59 of 100 OSA patients had abnormal LFTs at the start of CPAP therapy as compared to 35% patients after therapy which included either abnormal Alanine transaminase (ALT), Gamma-glutamyltransferase (GGT) or Alkaline phosphatase or in combination which suggests significant improvement. There were 10 patients with newly abnormal LFTs after therapy. Prior to CPAP 45 of 100 patients had abnormal ALT with average ALT of 58. 27 of 45 patients had ALT improvement. Ave ALT post therapy was 28.18 of 45 patients had no improvement and there were 4 new patients with abnormal ALT at the end of study. 51 0f 100 patients had abnormal GGT and 33 of 51 had improvement post therapy. 18 patients either had worsening or no improvement and there were 6 new patients with abnormal GGT at the end of study. 10 of 100 patients had abnormal Alk p and only 2 had improvement and 8 had no improvement Bilirubin levels of all patients were normal. 37% had fatty liver reported on abdominal ultrasounds. 15 patients had alcohol intake history including patients with occasional intake, Worsening of LFTs noticed in this group. BMI reduced in 7 patients. 5 of 7 patients had LFTs improvement in this group. Remaining patients BMI fluctuated by 1 kg over study period. 52% had high cholesterol. Of 52 patients, 14 patients had improvement in cholesterol and 7 patients had LFTs improved in this group. 8 Patients did not comply with CPAP. There was no change in LFTS in 6 patients with 1 patient it improved and in 1 they worsened.
Conclusion The study showed that overall prevalence of patients with abnormal LFTs was high in OSA patients (i.e. 59%) and there was significant improvement in ALT and GGT as compared to ALK p after CPAP therapy. Study suggests that optimal assessment and treatment of OSA may lead to LFTs improvement and it demands further prospective studies.
Disclosure of Interest R. Haider Employee of: Trinity College, H. O'Connor Consultant for: Clinical Professor in Gastroenterology, M. Azam Consultant for: Gastroenterology.

PTU-132 HEPATOLOGY E-CONSULTATION: THE WAY FORWARD? A REVIEW OF OUR INITIAL EXPERIENCE AND COST ANALYSIS

[1]S Moreea*, [1]PB Southern, [2]J Connolly, [1]VJ Appleby. *[1]Gastroenterology, Digestive Diseases Centre, Bradford Royal Infirmary, Duckworth Lane; [2]Bradford and Airedale Primary Care Trust, Bradford, UK*

10.1136/gutjnl-2014-307263.206

Introduction Outpatient visits to secondary care are costly to Primary Care (PC), time consuming for patients and not always appropriate. Our Trust having been a pioneer in nephrology e-Consultation (eC), we started a hepatology eC service in March 2012. This allows patients' records to be shared between PC and secondary care (SC) without the need for a detailed referral letter.

Our aims were to analyse our initial experience and perform a cost analysis of hepatology eC.

Methods Retrospective analysis of eC between Mar 12- Oct 13 using SystmOne. Tariffs used for cost analysis: new patient (NP) referral £181, follow up (FU) £103, **eC £24.**

Results In 18 months there were 81 eC (31M/50F mean age 52/56 y), each taking 10–15 min to complete. The median response time was 2 days (43% within 1 day). Referral reasons: isolated raised bilirubin/ALT/ALP/GGT: 44/81 (54%), mixed raised LFT's: 16/81 (20%), abnormal radiology 10%, hyperferritinaemia 9%, HBV/HCV 4%, general advice 2%. There was one inappropriate referral. In 18 cases, SC referral was recommended (22%), with 10/18 being referred and seen. The mean number of FU appointments was 3. Total cost to PC was £8,114: eC £1,944 and £6,170 for subsequent referrals. A minimum cost saving of £14,890 was made (81 NP (£14,661) and assuming one FU for each (£8,343)).

Conclusion eC is a rapid, cost-effective method of providing hepatology advice. Hidden costs including consultant time, clinic costs etc are difficult to quantify. We would, however, recommend eC as the way forward with a more appropriate tariff.

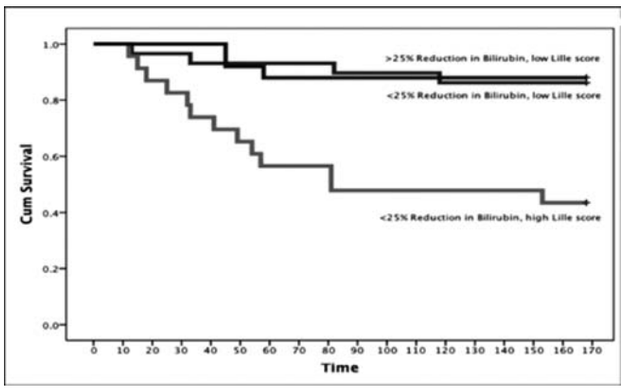
Disclosure of Interest None Declared.

PTU-133 PREDICTING MORTALITY IN ALCHOLIC HEPATITIS; A COMPARISON IN DIFFERENT SCORING SYSTEMS

SK Sidhu*, C Reddick, A Turner, K Mcwhirter, A Al-Rifai. *Salford Royal Hospital, Manchester, UK*

10.1136/gutjnl-2014-307263.207

Introduction Alcoholic hepatitis is a severe presentation of alcoholic liver disease. In its most severe form (with a Maddray score >32) the 1 month mortality is 35%. There are currently a few methods used to decide if continuation of corticosteroid therapy is beneficial, the Lille's Score and the presence of a 25% reduction in the serum bilirubin between day 1 and day 7. We assess the effectiveness of these scoring systems in assessing 6 month mortality.



Abstract PTU-133 Figure 1 Kaplan-Meier survival curve at 6 months post admission

Methods All patients admitted with a diagnosis of alcoholic hepatitis with a Maddray score > 32 with no evidence of sepsis over a 2 year period (2010–2012) were identified. All the notes were analysed and data collected by a F1 using a standardised profroma. Patients were placed into 4 groups: Group 1= <25% reduction in bilirubin, low Lille score, Group 2= <25% in bilirubin, high Lille score, Group 3= >25% reduction in bilirubin, low Lille score and Group 4= >25% reduction in bilirubin, high Lille score.

Results Overall 77 patients were included, at 6 months 21 died (27%). The mean age was 48 yrs (Range 27–67 years). At day 1 there was biochemical parameters consistent with significant liver disease (Madray Score: 68 (Range 34–169), Albumin 29.9 ± 4.9, INR: 2.0 ± 0.5, Bilirubin: 235 ± 135). 77 (100%) patients received nutritional support, Vitamin B and Thiamine. The baseline INR (Alive: 1.85 ± 0.47, Died: 2.31 ± 0.59 p = 0.001) and Albumin (Alive: 30.6 ± 4.6, Died: 28.1 ± 5.5 p = 0.04) were significantly deranged in patients who died at 6 months. There was no significant difference in the baseline Urea (Alive: 3.81 ± 3.54, Died: 4.26 ± 3.46 p = 0.610), Creatinine (Alive: 64.3 ± 45.9, Died: 79.5 ± 59.6 p = 0.232) and Bilirubin (Alive: 237.8 ± 144.6, Died: 228.1 ± 110.3 p = 0.779) in patients who died at 6 months.

There were no patient that fell into group 4. In the other 3 groups there were similar numbers of patients (Group 1: 29 patients, 6 month mortality 17%, Group 2: 23 patients, 6 month mortality 57%, Group 3: 25 patients, 6 month mortality 12%). Kaplan Meier survival curves were created for these 3 groups and is shown in Figure 1 below.

Conclusion In this study factors suggesting poor liver synthetic function (INR and Albumin) were associated with 6 month mortality. There was a significantly worse outcome with a high Lille score compared to a low Lille score. There was very little effect of a greater than 25% reduction in bilirubin on mortality at 6 months. From this study we would suggest that the Lille score is used to accurately predict a poor outcome.

Disclosure of Interest None Declared.

PTU-134 DURHAM PATHWAY FOR CARE OF PATIENTS WITH ADVANCE STAGE LIVER DISEASE (ASLD)

[1]S Saksena*, [2]L Hammal, [2]M Hewett, [2]C Lancaster. *[1]Hepatology, Durham, UK; [2]County Durham Darlington Foundation Trust, Durham, UK*

10.1136/gutjnl-2014-307263.208

Introduction Care of patients with ASLD is poorly organised. This service improvement project aimed to develop a consistent pathway of care for ASLD patients.

Methods Methods and results were iterative and included: 1. Track patient journey and Carer Experience: 2. Capture Activity Data from Clinical Coding: 3. Process mapping patient journey and Identify gaps in service provision 4. Design "Durham pathway" Figure for improving care of patients with ASLD with in reach liver service in community and developed range of both quantitative and qualitative metrics "Durham metrics" to monitor the effectiveness of the new pathway on patient outcomes and experience. 5. Engage relevant stakeholders and shared pathway 6. A 6 month Pilot of 20 ASLD patients with Community matron led inreach service. 7. Engage commissioners to fund ASLD pathway.

Results Pre-pilot patient and carer experience was poor with multiple unplanned admissions, preferred place of death was not discussed, majority of deaths in hospital, care was not