P48 VALIDATION OF THE NEUTROPHIL TO LYMPHOCYTE RATIO AS A MARKER OF POOR OUTCOMES AND STEROID RESPONSIVENESS IN ALCOHOLIC HEPATITIS: THE Gwent EXPERIENCE

Daniel Maggs*, Andrew Yeoman. Royal Gwent Hospital, Newport, UK

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Introduction The STOPAH study showed an improvement in short term mortality with prednisolone but failed to reach statistical significance. Forrest et al subsequently reported that a neutrophil–lymphocyte ratio (NLR) of 5–8 was a predictor of steroid response compared to those with an NLR <5 or >8. We reviewed the validity of the NLR as a marker of severity and steroid response in alcoholic hepatitis patients admitted to the Gwent liver unit.

Method We undertook a retrospective analysis of consecutive patients admitted with alcoholic hepatitis between January 2014 and March 2019. Patients were identified via coding and discharge notification diagnosis. Only patients diagnosed by a consultant gastroenterologist/hepatologist and with data available on electronic records were included. Baseline NLR and Glasgow alcoholic hepatitis score (GAHS) were recorded with a primary outcome of mortality. Additional observations included acute kidney injury (AKI), readmission within 90 days and day-7 Lille score for those treated with prednisolone.

Results Sixty-six patients were identified, of which 40 (61.6%) were male, with a median age of 47 (IQR 40–56). There were 12 patients (18.2%) with an NLR of 5–8. Patients with an NLR of 5–8 were more likely to be alive at 28 and 90 days than those with an NLR <5 or >8, however this trend did not continue at 1 year. Patients with an NLR 5–8 had lower rates of AKI (8%) and fewer readmissions within 90 days (33%) compared to those with NLR <5 (22% and 58% respectively) or >8 (52% and 45% respectively). Twenty-seven patients received prednisolone. Patients with an NLR 5–8 were more likely to receive prednisolone than others (66.7%) and tended towards a better response. Patients with NLR 5–8 had more favourable Lille scores with a mean of 0.251 (SD ± 0.207) compared to patients with an NLR <5 or >8 (Mean 0.459 and 0.406 respectively). Prednisolone was continued past 7 days in 71% of patients with NLR 5–8 compared to those with NLR <5 (44%) or >8 (25%).

Conclusion Our data supports the previously reported finding that patients with NLR 5–8 are more likely to respond to prednisolone. They had lower mortality up to 90 days and were less likely to have AKI or readmission within 90 days. Furthermore, an NLR >8 was associated with particularly poor 1-year survival and high incidence of AKI. The NLR appears to be another useful method of risk stratification in alcoholic hepatitis.

P49 A GENOME-WIDE ASSOCIATION STUDY OF HEPATIC ENCEPHALOPATHY IN CHRONIC LIVER DISEASE

1,2Sylvia Manimaran*, 1,2Ee Teng Goh, 3Andrew McQuillin, 3Stephen R Atkinson, 1Marsha Y Morgan, 2Mark R Thurlz. 1UCL Institute for Liver and Digestive Health, Division of Medicine, Royal Free Campus, University College London, UK; 2Molecular Psychiatry Laboratory, Division of Psychiatry, University College London, UK; 3Department of Metabolism, Digestion and Reproduction, Imperial College London, UK

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Introduction Hepatic encephalopathy (HE) is a frequent complication of cirrhosis but its development is not inevitable. There is evidence, from candidate gene studies, that the propensity to develop HE may be genetically determined but the findings are inconsistent. The aim of this study was to undertake a GWAS of HE in chronic liver disease.

Methods Genomic DNA was available in 857 participants in the UK STOPAH alcoholic hepatitis trial and 120 participants in the Royal Free Hospital (RFH) HE surveillance study. All had chronic liver disease and the majority were of British/Irish ancestry. Information on HE status was available in 777 participants in STOPAH and 109 in the RFH cohort. Cases were defined in the STOPAH cohort as those presenting with developing overt HE (OHE) within 28 days of admission based on West Haven criteria, and in the RFH cohort on a combination of West Haven criteria, the PHES test and EEG theta frequency. Controls were defined as STOPAH participants who did not present/develop OHE within 28 days and in the RFH cohort as participant classified as neuropsychiatrically unimpaired or as having minimal HE. Samples were genotyped using three different SNP arrays (Illumina exome chip, Psych Chip and OmniExpress array). Separate GWAS analyses were undertaken of each array using Plink (v1.9) followed by meta-analysis in METAL (v1.5.0). The primary analysis was adjusted first for population stratification and second for age, sex, and model for end-stage liver disease (MELD) score. Linear regression association analysis was also conducted in the RFH cohort (n=111) using the additional HE defining variables.

Results A total of 206 (26.5%) of the STOPAH participants and 33 (30.3%) of the RFH cohort had OHE. Single variants in TMEM135 (Transmembrane Protein 135), CACNB2 (Calcium Voltage-Gated Channel Auxiliary Subunit Beta 2), and WBP2 (WW Domain Binding Protein 2) showed suggestive association (P < 1 × 10^-5) with OHE in the primary analysis; the association with TMEM135, was retained in the adjusted analyses. An association at genome-wide significance (P=3.73 × 10^-9) was identified between the PHES score and a variant lying at a genetic locus containing genes AMTN (Amelotin) and MUC7 (Mucin 7, Secreted), the gene of interest.

Conclusions TMEM135 influences key metabolic pathways involved in the pathophysiology of HE, namely oxidative stress and glutamine and glutamate homeostasis. MUC7 influences factors which result in a reduction in systemic inflammation and influences the gut microbiota. These interesting associations need further exploration in extended cohorts.

P50 AUTOIMMUNE HEPATITIS PATIENTS HAVE COMPARABLE OUTCOMES FROM SARS-COV-2 INFECTION TO PATIENTS WITH LIVER DISEASE OF OTHER AETIOLOGY DESPITE IMMUNOSUPPRESSION: INTERNATIONAL REGISTRY DATA

1Thomas Marjot*, 1Andrew Moon, 1Tamsin Cargill, 1COVID-Hep/SECURE-cirrhosis contributors, Eleanor Barnes, 2Alfred Barratt, 3Gwilym Webb. 1Oxford Liver Unit, Translational Gastroenterology Unit, Oxford University Hospitals NHS Trust, Oxford, UK; 2Division of Gastroenterology and Hepatology, University of North Carolina, Chapel Hill, North Carolina, USA

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Background Despite concerns that patients with autoimmune hepatitis (AIH) may be at increased risk of adverse outcomes from COVID-19 due to use of immunosuppression, the
impact of SARS-CoV-2 infection on this patient group remains unclear.

**Methods** Two international reporting registries (COVID-Hep.net and SECURE-cirrhosis) collected data on the clinical course of laboratory-confirmed SARS-CoV-2 infection in patients with chronic liver disease (CLD), including AIH.

**Results** Between 25th March and 30th June 2020, 677 patients with CLD were reported. This included 51 cases of AIH from 13 countries; female (65%), median age 48 yrs, isolated AIH (75%), PBC overlap (14%), PSC overlap (4%), cirrhosis (57%). 80% AIH patients were receiving immunosuppression; prednisolone (53%), azathioprine (41%), mycophenolate (16%), budesonide (12%), tacrolimus (8%). Hospitalisation was lower in AIH compared to other causes of CLD (75% v. 91%; p=0.001) but there was no difference in rates of intensive care unit admission (27% v. 23%; p=0.496), invasive ventilation (14% v. 18%; p=0.567), or death (22% v. 20%; p=0.857) (figure 1A). Rates of mortality were similar between AIH and CLD of other aetiologies when stratified by liver disease stage (figure 1B). In multivariable analysis of the entire cohort, AIH was not significantly associated with death unlike age and baseline liver disease severity.

**Discussion** This is the largest reported cohort of patients with AIH and SARS-CoV-2 infection. Major outcomes in AIH did not differ from those seen in other CLD patients despite widespread use of immunosuppression. This will help guide treatment decisions and need for social distancing for AIH patients during the COVID-19 pandemic.

**P51 Liver transplantation does not significantly increase risk of mortality from SARS-CoV-2 infection: international registry data**

**Background** Despite concerns that liver transplant (LT) recipients may be at risk of adverse outcomes from COVID-19 due to coexisting medical comorbidities and use of immunosuppression, the impact of SARS-CoV-2 infection in this group remains unclear.

**Methods** Data from LT recipients with laboratory-confirmed SARS-CoV-2 were collected by two registries (COVID-Hep.net and COVIDcirrhosis.org). Comparisons were made with non-LT patients from a large UK hospital network.

**Results** From 25th March to 27th June 2020, data for 151 adult LT recipients from 18 countries and 627 non-LT patients were collected. Median ages were 60 and 73 years (p<0.001); 68% and 52% were male (p=0.001) respectively. Hospitalisation (82% v. 76%; p=0.116), and requirement for ICU (31% v. 30%; p=0.837) did not differ; ICU admission was more frequent in LT recipients (20% v. 5%; p<0.001) but fewer died (19% v. 27%; p=0.046) (figure 1). After multivariable analysis, age (OR 1.68 per 10 years; 95%CI 1.02–2.80), creatinine (OR 1.56/mg/dl; 1.04–2.33), and cancer (OR 1.56/mg/dl; 1.04–2.33), and cancer (OR 18.61; 1.94–...