analysis was performed using SPSS software version 25 for Windows (SPSS Inc., Chicago, IL, USA) (Corporation, 2017).

Results From 281 patients, 60.14% and 38.14% patients were presented for ERCP procedures before and after COVID-19 period respectively. Higher proportion of patients was presented with liver dysfunction before pandemic period as compared to pandemic period ($P<0.005$) and use of antibiotics was significantly higher in pandemic period ($P<0.05$). the success rate of ERCP procedure was higher before emergence of the pandemic and lesser during the COVID-19 first wave as 86.39% and 77.67% respectively but the results were insignificant ($P=0.07$). A statistically significant but negative correlation was observed between cholangitis and stent insertion with ERCP success and positive correlation between sphincterotomy and ERCP success as ($r=-0.129$, $P=0.030$), ($r=-0.172$, $P=0.004$) and ($r=0.232$, $P<0.001$) respectively. In binary logistic regression analysis, sphincterotomy ($\beta=2.800$, $P=0.028$) and stent insertion ($\beta=0.852$, $P=0.046$) were statistically significant predictors of ERCP outcomes. There was no statistically significant impact of cholangitis in the success of ERCP ($\beta=1.672$, $P=0.109$).

Conclusion COVID-19 pandemic significantly reduced ERCP procedures and success rate was also lowered due to restriction on endoscopic services in UK and all over the world. The endoscopic services can be resumed subject to specific SOPs to be followed in endoscopic units without affecting the safety of staff and patients.

P037 TRANSAMINITIS AND IRRITABLE BOWEL SYNDROME (IBS): A COMPREHENSIVE REVIEW

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Introduction We observed in literature that irritable bowel syndrome (IBS) may be linked with irregular parameters of metabolic system (MS) and liver function. For that reason, we are conducting this systematic review to comprehensively analyze the association of transaminitis (elevated ALT) with IBS.

Methodology This systematic review was designed by following methods described in the Cochrane Handbook for Systematic Reviews of Interventions. Published peer-reviewed journal articles were included. Data was extracted based on study designs Age, gender, author, date of publication or availability online, publication type, participants, gender (M/F) and types of IBS.

Results Our electronic of multiple databases yielded a total of 519 preliminary studies; we then removed duplicate studies and left with 326 studies. After reviewing full text of these articles, a total of 83 studies were eliminated and lastly, three studies were selected for this systematic review for quantitative and qualitative analysis. All the enrolled subjects in included studies were diagnosed with IBS by Rome II and III criteria and among these sub-jects, 50.4% had IBS-D, 13.8% had IBS-C, 30.3% had IBS-M, and 3.5% had IBS-U. The prevalence of elevated alanine aminotransferase (ALT) with other liver enzymes (γ -GT levels and AST) in patients with irritable bowel syndrome whether their BMI were high or not (16.9% vs. 7.7%; $p=0.015$) and γ -GT (24.1% vs. 11.5%; $p=0.037$) Lee et al., 2016.¹ The IBS-D subtype was seen more commonly in patients whose alcohol intake were significantly high

however their study data showed no significant change in elevation of ALT. The upper limits normal values for serum liver enzymes were de-fined as forty-one international per liter in males and thirty-one international unit per liter in females for ALT. No significant relationships were observed between IBS status and elevated γ -GT (OR, 1.647; 95% CI, 0.784–3.461).¹

Conclusion The review study proposes a potential relation between elevated ALT levels, MS, and IBS, and this review might be the first review in IBS patients to observe the association of elevated ALT in IBS population. Although further additional trials with a large sample size will be require confirming these results. Furthermore, for assessing the efficacy of the manipulation of gut microbiota ran-domized controlled trials in a large population of IBS patients are needed to establish a causal-resultant relationship IBS and MS and liver damage.

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P038 THE METABOLIC SWITCH OF HEPATITIS C VIRUS-RELATED HEPATOCELLULAR CARCINOMA AFTER EPHRIN TYPE-A RECEPTOR 2 IS KNOCKED DOWN

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Purpose Hepatitis C virus (HCV) is a major pathogen of liver diseases, including hepatitis, liver cirrhosis, and hepatocellular carcinoma. Few strategies were applied in the prevention and treatment of Hepatitis C. More and more evidence shows that ephrin receptor A2 (EphA2) is a key factor in the HCV entrance into the liver cells. During our study of metabolic reconstruction of liver cancer cells, we found metabolic progress changed after knocking down the expression of EphA2. That means EphA2 participates not only in the migration, integrin-mediated adhesion, proliferation, and differentiation but also in the metabolic biological processes. We designed an EphA2+metabolic classifier that can distinguish different subtypes of HCV-related HCC which have different characteristics, prognoses, and treatments.

Method Utilizing the data from gene expression omnibus (GEO) and normal liver tissues of GTEx, we focus on the metabolic changes between wild-type HuH7 cells and EphA2-knocked down HuH7 cells. We ran the Gene set enrichment analysis (GSEA) and Gene set variation analysis (GSVA) on the differential expression genes (DEGs) calculated by several packages of R language. And we tried to find the different expression patterns in gene set levels, based on the metabolism-related gene sets. Data from HCV-related HCC in GEO were explored. Bioinformatics methods are used to analyze the genomics, transcriptomics, and clinical data.

Results After utilizing the data from HCV-related HCC of GEO and normal liver tissues of GTEx, 101 LLPS related genes were selected for further research. We ran the GSEA and GSVA, and we found three significantly changed gene sets

in Biological Progress, including 'GOBP_ACETYLCHOLINE_METABOLIC_PROCESS', 'GOBP_L_KYNURENINE_METABOLIC_PROCESS', and 'GOBP_N_ACYLETHANOLAMINE_METABOLIC_PROCESS' according to the GSEA and GSVA results. Therefore, we established a classifier that can divide different HCV-related HCC patients into 4 subgroups, including EphA2+/Meta+, EphA2-/Meta-, EphA2-/Meta+, EphA2-/Meta-. The scatter plot map shows different genes expression of different subtypes. Moreover, it's obvious the 'EphA2+/Meta+' subtype has the lowest median survival and overall survival ($P < 0.01$). **Conclusion** Our work revealed that there is another important role of EphA2, except for the migration, adhesion, proliferation, and differentiation, it's also metabolism-related. It helps us to understand more comprehensively the function of EphA2 in the cancer cells and the carcinogenesis of HCV. Both of them will improve the understanding the HCV-related hepatocellular carcinoma and the development of anti-cancer treatment.

P039 STANDARD-VOLUME PLASMA EXCHANGE IN ACUTE LIVER FAILURE: ASSESSMENT OF LABORATORY PARAMETERS AND CLINICAL OUTCOMES

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Background Acute liver failure (ALF) is a life threatening syndrome defined by hepatic encephalopathy and an International Normalised Ratio greater than 1.5 in a patient with no underlying chronic liver disease. Plasma Exchange (PEX) is an extracorporeal procedure separating plasma constituents from cellular blood components by centrifugation and replaces it with stored plasma. A large randomised controlled trial in ALF demonstrated reduced mortality with high-volume PEX. The primary objective of this retrospective case-control study was to evaluate the effect of standard-volume (1.5 Total Blood volumes of plasma) PEX on clinical parameters and outcomes of ALF patients receiving PEX compared to those on standard medical treatment (SMT) only.

Methods This study compared clinical parameters, organ failure scores, and outcomes in patients with paracetamol-induced ALF receiving PEX ($n=16$) and those not receiving PEX ($n=68$). Parameters were recorded at admission to the intensive care unit and then 24 hours after the last cycle of PEX, and at similar timepoints for non-PEX patients. Data was collected for all ALF patients admitted to St James's University Hospital in Leeds, UK between 2017 and 2020. To further investigate the effects of different aetiologies of PEX and treatment options received, admission and outcome data was collected for a further 34 ALF patients admitted between 2011 and 2016 who did not receive PEX.

Results Analysis of results in 16 PEX and 68 non-PEX patients found significant improvements in biochemical parameters in patients 24 hours after receiving PEX (INR, PT, ALT, Bilirubin; $P < 0.01$), compared to those who were on SMT only. The admission Sequential Organ Failure Assessment (SOFA) mortality predictive scores were significantly higher in the PEX group than non-PEX ($P < 0.01$), which may explain the difference in mortality rates found in this study (37% and 22% respectively).

Conclusions Standard-Volume PEX is effective in improving clinical parameters in individuals with ALF compared to SMT. Patients are at lower risk of transfusion-related acute lung injuries and it is more cost-effective than high-volume PEX. This intervention could be considered for liver support until recovery or liver transplantation.

P040 IDENTIFICATION AND FUNCTIONAL CHARACTERISATION OF A RARE MTTP VARIANT UNDERLYING HEREDITARY NON-ALCOHOLIC FATTY LIVER DISEASE

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Background and Aims Non-alcoholic fatty liver disease (NAFLD) is a complex trait that has a global prevalence estimated as 25%. We aimed to identify the genetic variant underlying a four-generation family with progressive NAFLD leading to cirrhosis, decompensation and development of hepatocellular carcinoma in the absence of common risk factors such as obesity and type 2 diabetes.

Methods Exome sequencing and genome comparisons were used to identify the likely causal variant. We extensively characterised the clinical phenotype and post-prandial metabolic responses of family members with the identified novel variant in comparison to healthy non-carriers and wild type patients with NAFLD. Variant-expressing hepatocyte-like-cells (HLCs) were derived from human induced pluripotent stem cells generated from homozygous donor skin fibroblasts. The phenotype was assessed using imaging, targeted RNA analysis and molecular expression arrays.

Results We identified a rare causal variant in MTTP, c.1691T>C p.I564T (rs745447480) encoding microsomal triglyceride transfer protein (MTP) associated with progressive non-alcoholic fatty liver disease, unrelated to metabolic syndrome. Although other described mutations in MTTP cause abetalipoproteinemia, neither homozygotes nor heterozygotes exhibited characteristic manifestations of this severe disease. HLCs derived from a homozygote donor had lower lipoprotein ApoB secretion, compared to wild type cells. Cytoplasmic triglyceride accumulation in HLCs triggered endoplasmic reticulum stress, secretion of pro-inflammatory mediators and production of reactive oxygen species.