PWE-2 CLINICAL AND RADIOLOGICAL CHARACTERISATION OF POLYCYSTIC LIVER DISEASE

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10.1136/gutjnl-2021-BSG.192

Introduction Patients with Polycystic Liver Disease (PLD) have a wide range of symptom severity and disease course but little is known about the clinical impact of PLD in the UK. The aim of our study was to examine the spectrum of PLD including severity, cyst phenotype, symptoms and treatment in a large, secondary care population over a 10-year period.

Methods We systematically searched radiology reports from 2011-2020 at a major acute hospital serving a catchment population of 675,000. 'Polycystic' and 'multiple cysts' were used as search terms to identify patients, excluding those without liver or renal cysts. Electronic patient records were interrogated to collect demographics, clinical information and radiology. Images were reviewed to confirm numbers and sizes of cysts.

Results We identified 484 patients with multiple liver cysts; 211 with isolated PLD and 273 with both liver and kidney cysts. Of the radiology images available to view, 133/234 (57%) met the accepted definition of PLD (>10 liver cysts). Overall, 39/484 (8%) had symptoms from hepatic cysts whereas 26/133 (20%) meeting the PLD definition were symptomatic with abdominal pain being the most common symptom (85%). The mean age of first reporting PLD symptoms was 56 (range 36-84 years). Females were a higher proportion of both symptomatic patients (72%) and those requiring treatment (82%). Symptoms correlated with cyst number, occurring in 0-10 cysts 6/101 (6%), 11-20 cysts 6/42 (14%), >20 cysts 20/91 (22%) respectively. Cyst size similarly impacted symptoms and 218/229 (95%) of patients with small (<5cm) liver cysts were asymptomatic. The mean largest cyst size was 4.0 cm (range 0.3-14.8) in asymptomatic people and 8.6 cm (range 4.3-21.0) in those with symptoms. Only 16/484 (3%) received targeted treatment for hepatic cysts with fenestration being the most common procedure performed, followed by resection and liver transplantation. No patients received somatostatin analogues during the study period.

Conclusions This is the largest systematic study of a PLD population from the UK and describes the clinical spectrum of disease. We found patients with multiple simple liver cysts rarely became symptomatic or required treatment. However, defined PLD was more severe in females with a higher rate of symptoms and need for specialist treatment. Symptomatic disease increased when multiple hepatic cysts exceeded 10 in number or grew larger than 5cm. Our data informs the natural history of PLD including the need to access appropriate care for symptomatic disease and highlights the importance of the recently established UK PLD Registry [<https://clinicaltrials.gov/ct2/show/NCT04645251>].

PWE-3 UTILISING ILFT TO INCREASE THE IDENTIFICATION AND DIAGNOSIS OF HEPATITIS B AND C INFECTIONS

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10.1136/gutjnl-2021-BSG.193

Background Hepatitis B and C Virus (HBV and HCV) infections can lead to fibrosis, cirrhosis, and ultimately death; yet, HBV and HCV patients often go undiagnosed. Indeed, 50% of UK HCV infections are estimated to be undiagnosed. These individuals likely being older and not having overt risks for HCV infection.

Automated testing of abnormal LFTs for HBV and HCV may help find these patients. Intelligent liver function testing (iLFT) is now routine in NHS Tayside and all abnormal LFTs are reflex tested for HBV and HCV. This may give additional opportunity for case finding in difficult to reach populations.

Methods Retrospective cohort analysis of patients who initiated iLFT testing, triggered at an ALT value above 30, from August 2018 to August 2020 and received an HBV or HCV outcome.

Results For HCV, 49 patients out of 6791 (0.7%) were confirmed to be HCV antibody positive. 29 antibody positive patients (59%) had detectable HCV RNA levels, predominantly Genotype 3 (34%), suggestive of an active infection. 28/29 patients (97%) commenced treatment on average 65 days from the iLFT request date (95% CI 55.4 – 74.6 days) and 1 patient failed to attend.

26/28 patients (93%) completed their treatment, 1 experienced side-effects and 1 was lost to follow-up. An intention-to-treat analysis demonstrated 21 patients (75%) to have a sustained viral response (SVR). 19 SVR patients (90%) were discharged or due for discharge and 2 continued under review due to the presence of fibrosis and/or cirrhosis.

Patients who underwent HCV treatment were on average 52-years-old, predominantly declared to having never injected drugs (75%) and primarily resided in more affluent areas (75%).

For HBV, iLFT identified 2 chronic active and 4 inactive carrier HBV infected patients. The 2 chronic active patients were initiated on treatment and all 6 patients remain under review. 1 chronic patient was also found to be Delta antigen positive.

The average age of the 6 HBV patients was 52-years-old and all 6 patients (100%) lived in more affluent areas.

Conclusions iLFT successfully identified patients with HBV and HCV infections and provided an opportunity for cure and/or continued follow-up. Of note, most patients treated for HCV gave no history of injecting drugs and resided in more affluent areas. NHS Tayside has already identified approximately 90% of prevalent HCV cases. Therefore, iLFT has potential to be even more effective in areas with lower diagnosis rates and is a useful tool for identifying 'hard to reach' HCV positive patients.

PWE-4 CLINIC NON-ATTENDANCE IN ALCOHOL-RELATED LIVER DISEASE IS VERY COMMON, AND LINKED TO POORER 1-YEAR OUTCOMES

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10.1136/gutjnl-2021-BSG.194

Introduction Mortality following acute decompensation (AD) of alcohol-related chronic liver disease remains high despite significant advances in in-patient therapeutics and supportive care. Ongoing specialist support is recommended for all survivors and yet many patients are lost to follow up over time,

potentially impacting outcomes. We retrospectively analysed a cohort of patients who survived an AD event and were offered specialist clinic follow up in our centre.

Methods Electronic records were reviewed for all patients surviving an admission for AD and offered rapid local follow up (within 4 weeks), from January 2016 to December 2017. Demographic data, clinic attendances and clinical course (Child-Pugh/MELD scores at 1, 3, 6, and 12 months) were recorded, as well as 1-year mortality and abstinence rates.

Results 129 unique patients were included (32% female; 68% male), with median age 53 (range 29-83). Mortality was 24% (n=31) at 1 year, in keeping with published cohorts. Of these, 55% (n=17) were directly attributable to liver disease. At 3 years mortality reached 51% (n=66), with approximately half (48%; n=32) due to a liver cause. 91 AD survivors (71%) attended their initial appointment (non-attendance rate 29%). 1 year mortality was significantly lower in this group compared to non-attenders [18 (20%) v 14 (38%), $p=0.03$]. This was reflected in a downward trend in mean MELD scores for attenders at 1, 3, 6 and 12 months (15, 15, 14 and 12 respectively), whereas non-attenders showed static or worsening disease (14, 15, 17, 14). Similarly, Child-Pugh (CP) scores showed significantly greater numbers of attenders recompensated to CP-A by 12 months [29 (32%) v 5 (16%), $p=0.033$]. Nearly half (47%; n=60) of all patients were still drinking alcohol at 1 year. However, those who attended the first appointment were significantly more likely to be abstinent at 1 year than those who did not [42 (46%) v 6 (16%), $p=0.002$], which is considered the most likely reason for better 1-year survival in this group.

Conclusions Our results show that poor initial engagement with follow up is very common, and is associated with lower rates of abstinence, recompensation, and survival at 1 year. There are likely to be many reasons patients cannot or do not attend. Exploring these factors - and identifying ways to promote engagement - should be considered a high priority to improve longer-term outcomes.

PWE-5 EVALUATION OF INFECTION STATUS IN PATIENTS PREVIOUSLY DIAGNOSED WITH HEPATITIS C IN A LOCAL AUTHORITY

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10.1136/gutjnl-2021-BSG.195

Introduction The World Health Organization aims to eliminate the threat of hepatitis C (HCV) by 2030. Fortunately, there are now highly effective direct acting antiviral (DAA) drugs that can be used to treat the virus. Despite this, patients with untreated or incomplete treatment of HCV persist. We aim to identify patients within a local authority who have active HCV infection in order re-engage them into our services.

Methods A retrospective review of patients diagnosed with hepatitis C between 1996 and 2017 was conducted in a single local authority. The patients were identified from a Public Health England database. The data was originally collected in July 2019 and reviewed in November 2020. Those identified as having active HCV infection were called to arrange confirmatory RNA testing with a view to starting treatment if found positive. All other patients were reviewed for changes to their

Abstract PWE-5 Table 1 Number of HCV patients classified based on their infection status in July 2019 and November 2020

	Jul 2019	Nov 2020
A	30 (25.8%)	27 (24.3%)
B1	7 (6.0%)	4 (3.6%)
B2	10 (8.6%)	12 (10.8%)
B3	9 (7.8%)	12 (10.8%)
C	60 (51.7%)	56 (50.5%)
Total	116	111

infection status. Patients who had moved out of area or were deceased were excluded from analysis.

Results A total of 111 patients were included in November 2020. The patients were classified into three groups. Group A represented patients with ongoing HCV infection and accounted for 27 (24.3%) patients. Within Group A, 12 were being actively managed, 10 were uncontactable, 4 moved out of area and one was unwilling to engage. Group B included those who required further investigation to determine their infection status, accounting for 28 (25.2%) patients. Amongst these: 4 patients had a positive HCV antibody test without any record of RNA PCR testing (Group B1); 12 had no record of ever having HCV infection (Group B2); and 12 required further RNA PCR testing to confirm HCV clearance post-treatment (Group B3). Group C patients were clear of HCV infection and accounted for 56 (50.5%) patients. This data is compared to data from July 2019 in Table 1. There were 7 cases of re-infection and 10 patients were deceased.

Conclusions The majority of patients are managed appropriately. However, the proportion of patients requiring further management has remained static over the past year. Non-attendance and difficulty contacting patients remain predominant barriers to management. Different methods such as improved co-ordination with community services, flexible appointments and opportunistic testing are needed in this local authority to achieve the WHO target of eliminating HCV by 2030. The feasibility and efficacy of this will be evaluated in 6 months' time.

PWE-6 BIOLOGIC INDUCED HEPATOTOXICITY IN INFLAMMATORY BOWEL DISEASE (IBD); A SYSTEMATIC REVIEW AND META-ANALYSIS

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10.1136/gutjnl-2021-BSG.196

Introduction Hepatotoxicity and use of biologic drugs have historically been challenging in IBD. We aim to study the prevalence of hepatotoxicity in adult patients using biologic medications.

Methodology With the guidelines described by PRISMA-P, a detailed search strategy for each electronic database were

Abstract PWE-6 Figure 1 Forest plot of all included studies

developed based on the one used for PubMed, Medline, and Embase. We include prospective and retrospective RCTs that assessed the efficacy and hepatotoxicity of biologics in IBD patients. Hepatotoxicity was defined as AST and/or ALT $>2\times$ upper limit of normal or cholestasis. We used Review Manager 5 (RevMan5) to analyse the data. We calculated the Odds ratio (OR) with a 95% confidence interval (CI). We assessed heterogeneity using the χ^2 test and the I^2 statistic.

Results We identified 862 records in total. After we had removed duplicates 564 records were left for review. Four studies did not report on how participants were randomized to treatment groups or how allocation concealment was achieved, we rated these studies at unclear risk of bias for these domains. All our included trials mentioned adverse effect of biologics on liver which are analysed statistically, and result is summarized in figure 1. There was no presence of any heterogeneity among studies by ($\chi^2 = 2.21$, $df = 6$, $P = 0.90$, and $I^2 = 0\%$), when the whole seven studies were involved for analysis. Our meta-analysis was conducted on the fixed effects model, with the (0.770, 95% CI [-0.630, 0.957], and $P = 0.02$). Hepatotoxicity was not related to any TNF- α antagonist. Thiopurine induced liver injury occurred more frequently within the first months of treatment, 50% of cases within the first 3 months. Although, risk of hepatotoxicity above the third quartile (6-MMPR $> 5,300$) was 5 times that below the third quartile (11.4% vs 2.3%, $P < 0.05$).

Conclusion This study summed up the broad information of incidences of biologic related hepatotoxicity in IBD patients in clinical practice setting. When hepatotoxicity occurred, the treatment was withdrawn in thirty one percent of patients, but an important percentage, forty-four was able to continue full dose of thiopurine once the dose was temporarily adjusted. This group of patients had a dose-dependent hepatotoxicity rather than an immunologic hepatitis.

REFERENCE

- Choudhury J, Sanyal AJ. Insulin resistance and the pathogenesis of nonalcoholic fatty liver disease. *Clin Liver Dis.* Aug 2004;8(3):575-594, ix. doi: 10.1016/j.cld.2004.04.006.
- Gadour E, Hassan Z, Shrivani K P31|Covid-19 induced hepatitis (CIH), definition and diagnostic criteria of a poorly understood new clinical syndrome *Gut* 2020;69:A22.

PWE-7 ILFT OUTCOME COMPARED WITH CLINIC DIAGNOSIS: AUTOMATED, RAPID AND SAFE DETECTION OF LIVER DISEASE

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10.1136/gutjnl-2021-BSG.197

Introduction Mortality from chronic liver disease (CLD) in the UK has risen 400% since 1970, and incident liver function tests (LFTs) are abnormal in 20% of cases. Routine intelligent liver function testing (iLFT) was launched in NHS Tayside, Scotland in 2018. If the requestor provides BMI, alcohol intake and co-morbidities, patients with abnormal LFTs have reflex tests, including non-invasive fibrosis scores, automatically without further venepuncture. GPs are provided with automated diagnoses and management plans: secondary care referral for fibrosis assessment or treatment; primary care follow up with ultrasound or repeat LFTs; or primary care management alone.

Methods Patients undergoing iLFT between August 2018 and August 2019 were tracked to identify iLFT outcome(s), if they were referred to liver services, and their final clinic diagnosis.

Results 2362 iLFT requests were received. No cascade occurred in 540 cases, either due to normal LFTs (81.5%) or insufficient clinical data.

There were 2017 iLFT outcomes from 1822 patients. The most common outcome was elevated ALT without fibrosis ($n=430$) followed by alcohol related liver disease without fibrosis ($n=267$).

Secondary care referral was recommended for 474 patients, of which 373 were referred (78.9%). A further 105 of 199 (52.8%) were referred following the outcomes of iLFT-recommended tests. Just 88 of 1141 (7.7%) patients recommended for primary care management were referred.

Liver clinic diagnoses were available for 248 patients. The most common diagnosis was NAFLD without fibrosis (27.8%) followed by ARLD with fibrosis (12.5%). 19 patients had malignancy (non-liver $n=18$, neuroendocrine $n=1$). Figure 1 shows all diagnoses. Of patients with elevated ALT and Gamma-GT only, with no declared risk factors for CLD, 66.7% ($n=20$) had NAFLD.

iLFT diagnosis concurred with clinic diagnosis (exact match; match other than no evidence of advanced fibrosis following assessment; or descriptive iLFT outcome with no identified risk factor with a 'fail safe' to prompt referral) in 225 cases (90.7%). In the remaining cases, iLFT failed safe despite a diagnostic inaccuracy (22/248), and only had a wrong diagnosis with no fail safe in 1 case; a patient with haemochromatosis with transferrin saturations below the upper limit of normal.

Conclusions In the real world iLFT rapidly and safely diagnoses CLD while ensuring patients with other problems, such as

Abstract PWE-7 Figure 1 Clinic diagnoses in patients referred through iLFT