Methods In this study, 129 patients with varying degrees of liver fibrosis and 223 controls without liver fibrosis were recruited. Further 41 patients with no liver, but kidney fibrosis were also included to evaluate interference with expressions of kidney fibrosis. Urinary low molecular weight proteome was then analysed by capillary electrophoresis coupled to mass spectrometry (CE-MS).

Results CE-MS identified 50 urinary peptides associated with liver fibrosis. When combined into a classifier, LivFib-50, it separated liver fibrosis from controls with an area under the curve (AUC) of 0.95 (95% CI: 0.90–0.98, p<0.0001) with 83.5% sensitivity and 95.1% specificity (figure 1). In the first validation cohort, LivFib-50 demonstrated an AUC of 0.94 (95% CI: 0.89–0.97, p<0.0001). In a second validation cohort, LivFib-50 was adjusted for age and demonstrated an AUC of 0.91 (95% CI: 0.76 -0.98, p<0.0001). Age-adjusted LivFib-50 showed 84.2% sensitivity (95% CI: 60.4 – 96.6) and 82.4% specificity (95% CI: 56.6 – 96.2) for detection of liver fibrosis. The sequence-identified peptides were mainly fragments of collagen chains, uromodulin and Na/K-transporting ATPase subunit γ. We also identified ten putative proteolytic cleavage sites; eight were specific for matrix metallopeptidases and two for cathepsins.

Conclusions Profiling of urinary peptides in liver fibrosis offers potential diagnostic markers. The discovered proteolytic sites could enhance our knowledge about the pathophysiology of liver fibrosis.

P9 EVALUATING THE PERSPECTIVES OF TRAINEES ON THE HEPATOLOGY TRAINING PATHWAY

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Background Obtaining a CCT (Certificate of Completion of Training) in Hepatology requires 24 months of dedicated Hepatology training. The non-academic pathway includes an advanced training program (ATP) year which is nationally competitive (17 posts) and often geographically challenging. Shape of Training will enforce a reduction in Gastroenterology training to 4 years requiring trainees to make earlier and more restrictive career decisions (e.g. dropping colonoscopy), and demands training program designers to provide sufficient timely training opportunities while meeting workforce requirements. Of note, the number of Hepatologists nationally is insufficient. With respect to Hepatology training, we sought to gauge the opinions of ST3/4 Gastroenterology trainees to help inform program design.

Methodology Quantitative and qualitative data was collected using anonymised questionnaires which were completed by trainees attending the BSG-led 'Introduction to Gastroenterology Day 2019' with subsequent framework analysis of qualitative data.

Results 44 trainees completed the questionnaire and 32 (73%) are considering a career in Hepatology (5 'definitely', 17 'probably', 10 'maybe'). Reasons include: positive clinical experiences, Hepatology patients and disease pathogenesis, and personal circumstances (mainly geographical).

5/32 (16%) aim to work in a Level 3 centre, 15/32 (47%) in a level 2 centre, 3/32 (9%) in a district general hospital (DGH) with the remainder undecided. Of note (considering the whole dataset), 5/44 (11%) are unsure if there is a transplant centre in their deanery. 10/32 (31%) would be able to move and 7/32 (22%) would want to move for an ATP.

16/32 (50%) trainees considering Hepatology favour current national allocation, regarding it as a fair process. The remaining 16/32 (50%) favour local allocation largely due to availability of level 2/3 centres in their deanery.

Of the 22 trainees who are 'probably' or 'definitely' considering Hepatology, 12/22 (55%) are willing to drop colonoscopy training (including 4/5 (80%) who are 'definitely' considering Hepatology).

Discussion Our results suggest that a significant proportion of early trainees are interested in a career in Hepatology providing reassurance regarding any potential increase in ATPs. Furthermore, outcomes regarding dropping colonoscopy (as necessitated by a shorter training program) are reassuring. Trainees are less interested in DGH Hepatology which is concerning as this is where the need is (Lancet Commission 2019). National ATP allocation is generally supported but would benefit from greater post coverage geographically. Providing trainees with salient information early- ideally prior to commencing specialty training- will facilitate decision making (including choosing or moving deaneries) to permit successful career planning.

P10 LIVER IRON CONCENTRATION DETERMINED BY MAGNETIC RESONANCE IMAGING IS SUPERIOR TO SERUM FERRITIN IN HAEMOCHROMATOSIS

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Background Venesection is the standard treatment for hereditary haemochromatosis (HH) preventing morbidity and mortality, but therapeutic venesection may not be clinically beneficial in all patients. Furthermore, serum ferritin may not accurately reflect the true extent of iron overload. To inform practice we correlated magnetic resonance (MR) iron quantification data in a cohort investigated for HH.

Methods A cross-sectional study of 93 hyperferritinaemic subjects without known liver or haematological disease was undertaken. All subjects underwent HFE genotyping and MR imaging with hepatic iron quantification. Serum ferritin and transferrin saturation values were time-matched with MR liver iron concentration (LIC). For those patients undergoing venesection, volume of blood removed was calculated as a measure of iron overload.

Results The cohort comprised 45 C282Y homozygotes, 23 compound heterozygotes (C282Y/H63D) and 25 who were either C282Y heterozygotes or wild-type for HFE. Of 45 C282Y homozygotes (20 females, 25 males, mean age 60), serum ferritin ranged 184–4523 mcg/l (mean 1027 mcg/l), transferrin saturation 43–100% (mean 81%), and LIC 1.27–9.97 mg/g (mean 5.06 mg/g). Removing the two homozygotes with ferritin >3000 mcg/l, there was a moderately positive correlation between ferritin and LIC in homozygotes (r=0.48).

Of 23 compound heterozygotes (5 females, 18 males, mean age 55), serum ferritin ranged 418–3016 mcg/l (mean 1033 mcg/l), transferrin saturation 29%-100% (mean 51%) and LIC 1.36–4.58 mg/g (mean 2.43 mg/g). Serum ferritin of >1000

mcg/l had 92% sensitivity and 50% specificity for the detection of significant iron overload (LIC >2.5 mg/g).

In the remaining group (3 females, 22 males, average age 65), serum ferritin ranged 351–1957 mcg/l (mean 1113 mcg/l), transferrin saturation 21%-96% (mean 46%) and LIC 1.41–4.23 mg/g (mean 2.11 mg/g). Those with liver risk factors (including alcohol and high BMI) had higher serum ferritin (1254 vs 901 mcg/l, p<0.05) with comparable LIC (2.19 vs 1.97 mg/g).

LIC was significantly higher in homozygotes compared with other groups for any given ferritin concentration. Of the 93 patients, 20 homozygotes and 4 compound heterozygotes were venesected to serum ferritin <100 mcg/l, requiring between 3120 and 16930 mls of blood removed to achieve this target (mean 8950 mls). Considering this group, LIC and venesection requirement (mls) were moderately positively correlated (r=0.70) to a significantly greater extent than LIC and serum ferritin (r=0.05).

Conclusion MR LIC correlates well with iron overload in HH as calculated by volume of blood removed; LIC is therefore likely to be discriminatory in non-homozygotes where additional risk factors contribute to hyperferritinaemia. Compound heterozygotes are more likely to benefit from venesection when serum ferritin is >1000 mcg/l.

P11 IMPACT OF OPIATE SUBSTITUTION THERAPY ON HEPATITIS C TREATMENT OUCOMES FOR PERSONS WHO INJECT DRUGS AT INJECTING EQUIPMENT PROVISION SITES IN THE ADVANCE HCV TRIAL

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Background ADVANCE HCV participants are prescribed direct acting anti-viral (DAA) treatment (elbasvir/grazoprevir, ± sofosbuvir for 8/12 weeks) for Hepatitis C (HCV). Eligibility requires participants to be active (within prior 3 months) Persons Who Inject Drugs (PWID). The Injecting Equipment Provision Sites (IEPS) in the trial do not provide opiate substitution therapy (OST) and there is no eligibility requirement to be on OST. This abstract reviews the potential impact of: receiving OST at baseline, commencing OST during treatment; and no OST, upon treatment outcomes.

Methods Participants are asked if they are prescribed OST upon study enrolment. At subsequent on-treatment study visits, they are asked if they have been prescribed or stopped OST since enrolment. Participants are tested for Sustained Viral Response at 12 weeks post-treatment (SVR12). If participants do not return for an SVR12 test, they were considered Lost to Follow-up (LTFU). OST, SVR12 and LTFU data were reviewed for all randomised participants, as follow-up is now complete.

Results Data are available for all 129 randomised participants.

Forty-nine were on OST prior to treatment. 43 (88%) achieved SVR^{12} and 5 (10%) did not and 1 (2%) is deceased due to illicit drug overdose.

Ten were prescribed OST after commencing treatment. 9 (90%) achieved SVR^{12}, 1 (10%) is LTFU.

No participants in these two groups stopped their OST prescription at any point prior to finishing treatment.

Seventy participants reported no OST prescription. 47 (67%) achieved SVR^{12} and 10 did not, 6 (9%) are LTFU and 1 deceased (illicit drug overdose). 6 (9%) did not initiate treatment following diagnosis.

Conclusions Receipt of OST appears to have a positive effect on commencing DAA treatment for HCV, with all participants that did not commence treatment belonging to the cohort who received no OST prescription at any point during or prior to treatment. Obtaining SVR12 also appears to be more likely for those receiving OST either during or prior to treatment in this cohort of PWID, and less likely for those who received no OST prescription at any point (figure 1). OST receipt prior to DAA treatment may decrease likelihood to become LTFU, with a higher proportion of LTFU observed in those with no OST prescription prior to treatment, and those who commenced OST during treatment.

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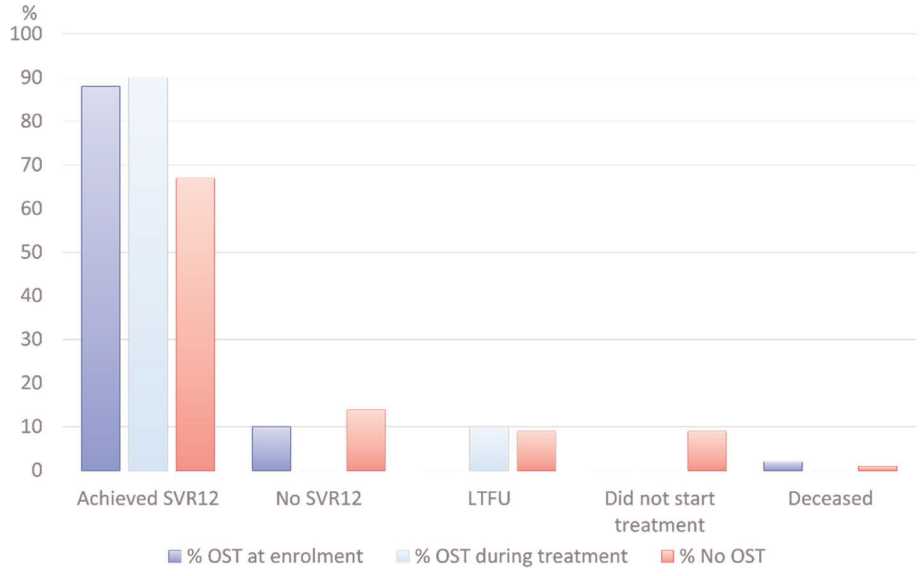

Abstract P11 Figure 1 Impact of OST on HCV treatment outcomes