

behaviour.² A custodial sentence provides a unique opportunity to focus on hard to reach patients, providing the possibility of testing, diagnosis and treatment of the disease.

Methods An online questionnaire was made available to nursing staff currently working for the Scottish Prison Service (SPS). A questionnaire was also given to prisoners currently incarcerated in Scottish Prisons. The data gathered was compiled to evaluate the need for a standardised care pathway for HCV in the SPS.

Results Almost half of prisoners considered themselves to be at risk of HCV. Seventeen per cent of prisoners who did not consider themselves to be at risk had shared needles and/or other injecting paraphernalia. Eighty-eight per cent of blood borne virus nurses thought it would be of benefit if the prisoner did not move prison whilst receiving HCV treatment.

Forty seven per cent of prisoners considered themselves to be at risk of Hepatitis C and 2% were unsure of their potential risk. Twentyseven per cent of prisoners who do not consider themselves to be at risk have used intravenous drugs, 10.6% have shared needles and a further 6% have shared other injecting paraphernalia. Eightytwo per cent of the people who considered themselves to be at risk, or were unsure of their potential risk have been offered a test and 74% have been tested. Seventy per cent of the group that have been tested were tested in prison. Fifty seven per cent tested positive. Eightyeight per cent of blood borne virus nurses thought it would be of benefit to the treatment of Hepatitis C if the prisoner did not move prison whilst receiving treatment.

Conclusion A clear majority of the nurses thought that a standardised transfer form would be of benefit to patient care. As a result of this finding a standardised transfer form is in the process of being designed. The secondary outcome measures proved most interesting. Many prisoners claimed to have been vaccinated against Hepatitis C, indicating their lack of understanding of the virus. Further research is needed into improving education for the high risk population.

A lack of awareness of HCV amongst prisoners was identified, making further education crucial to achieving satisfactory health promotion and disease prevention. This study also concludes that a standardised transfer form would be of benefit to patient care. Further research is needed into improving education for the high risk population.

Disclosure of Interest None Declared.

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PWE-142 DOES THE PRE-BONE MINERAL DENSITY FRAX SCORE PREDICT FRACTURE RISK IN PATIENTS WITH CIRRHOSIS?

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Introduction Cirrhosis is an independent risk factor for osteoporosis, with risk of morbidity through fragility fractures. BSG guidelines recommend that all patients with cirrhosis should be offered DEXA scans to measure bone mineral density (BMD), and receive appropriate treatment. The FRAX score is a widely used internet-based algorithm that predicts fracture risk, which can be calculated with or without BMD data. The aim of this study was to determine if the FRAX score without BMD is effective in predicting fracture risk in patients with cirrhosis to potentially reduce the need for BMD testing.

Methods Between Nov 11 and Jan 12 consecutive patients with cirrhosis who were reviewed in 3 sub-specialist liver clinics (ALD, NASH and HCV) at the Freeman Hospital were included. Clinical

and demographic patient information was collected retrospectively. FRAX scores were calculated with and without BMD data.

Results 146 patients (46 NASH, 50 ALD and 50 HCV) were studied (mean age 59±12, 68% male, mean BMI 30±6). 91 patients had BMD assessed (9 [10%] were osteoporotic and 43 [47%] were osteopenic at the spine and/or hip). 10 (6.8%) had a previous osteoporotic fracture. The pre-BMD FRAX score categorised fracture risk as high in no patients, intermediate in 26 (18%) and low in 120 (82%). Overall, 11 (18%) were categorised as high risk with the post-BMD FRAX. 9 patients (10%) moved from a low risk with pre-BMD FRAX to a high risk with post BMD FRAX. In addition 2 (3%) moved from intermediate to high with post-BMD FRAX. Only 5 of 9 (55%) of patients with osteoporosis on BMD were classified as high risk with post BMD FRAX score. There were no significant differences in fracture risk or BMD between patients with ALD, NASH or HCV.

Conclusion The pre-BMD FRAX score underestimates fracture risk in patients with cirrhosis. Therefore, assessment of BMD should continue to form part of the assessment of fracture risk in patients with cirrhosis. As the post-BMD FRAX score includes other risk factors for fracture in addition to bone density it might be the most appropriate to determine which patients require treatment to prevent fractures.

Disclosure of Interest None Declared.

PWE-143 SEQUENTIAL ORAL ANTI-VIRAL THERAPY FOLLOWING PEGYLATED-INTERFERON-ALPHA FAILURE SIGNIFICANTLY INCREASES HBSAG DECLINE

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Introduction Tenofovir and Entecavir are potent oral antivirals (OAV's) and leading agents in the treatment of Chronic Hepatitis B (CHB). Despite this, they have limited ability to reduce HBsAg, thus indefinite or life-long therapy is mandated as these drugs rarely achieve immunological control. Pegylated-Interferon-Alpha (PEG-IFN α) is associated with better rates of HBsAg decline, but only a minority of patients achieve sustained immune control. New strategies to reduce HBsAg and achieve immune control, including combination PEG-IFN α & OAV are under investigation at present. Here we report data on treatment response in a cohort receiving sequential OAV therapy following PEG-IFN α failure.

Methods 55 patients (male = 41), median age 31 (range 18–55) were treated with PEG-IFN α over the course of the study. 13 patients remain on therapy and 5 patients discontinued due to poor response or intolerance. 37 patients, HBeAg positive (n = 29), completed 48 weeks PEG-IFN α and were included in the analysis. 23/37 patients (HBeAg positive = 18), following treatment with PEG-IFN α were considered non-responders and treated with sequential OAV therapy. Treatment response in this cohort was compared with 60 patients, (male = 54), median age 45 (range 21–70) receiving OAV monotherapy over a 12-month period. Serum ALT, HBV DNA and HBsAg were quantified at baseline and longitudinally in both cohorts.

Results In the sequential therapy group, baseline median ALT was 60 IU/L (range 31–194) and median HBV DNA 5.15 logIU/ml compared with 43 IU/L and 3.43 logIU/ml respectively for the OAV monotherapy group. ALT normalisation and reduction in HBV DNA to undetectable levels was similar in both groups over follow-up (p = n.s). Following 12-months of OAV monotherapy the decline in HBsAg in this group overall was 0.06 logIU/ml compared to baseline (p = n.s). In patients receiving sequential OAV therapy there was a significant decline in HBsAg over follow-up compared to baseline (0.65 log IU/ml, p = 0.0001). In addition 4/18 HBeAg positive patients seroconverted on sequential therapy and 1 patient cleared HBsAg.

Conclusion Sequential OAV therapy following treatment failure with PEG-IFN α is associated with greater reductions of HBsAg than PEG-IFN α alone or OAV monotherapy. This suggests PEG-IFN α may prime the immune response, even in the context of treatment failure, leading to better responses with sequential OAV therapy. Further studies are needed to confirm this finding and determine whether a similar priming effect is observed with shorter courses of PEG-IFN α in line with current PEG-IFN α stopping rules.

Disclosure of Interest None Declared.

PWE-144 **FRAX SCORE IN THE ASSESSMENT OF BONE MINERAL DENSITY CHANGES IN TENOFOVIR TREATED CHRONIC HEPATITIS B PATIENTS**

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Introduction Tenofovir Disoproxil Fumarate (TDF) is an established oral antiviral (OAV) in the treatment of Chronic Hepatitis B (CHB). Bone Mineral Density (BMD) loss has been described in TDF treated HIV patients, but limited data exist in CHB. We have used DEXA scanning to determine BMD changes in TDF treated patients and have reported the possibility of BMD loss. DEXA scanning, however, is costly and requires longitudinal follow-up. We assessed the value of the FRAX[®] score and of bone biochemistry to evaluate their utility in TDF treated patients.

Methods The FRAX score is a WHO web-based tool, used to calculate 10-year fracture risk and the need for lifestyle modification, DEXA scanning or preventative treatment. CHB patients treated with TDF for a minimum of 12-months and a control group not exposed to TDF were studied. 122 TDF exposed patients (male = 89), median age 45 (range = 26–64) and 48 patients (male = 31), median age 36 (range = 20–62) not exposed to TDF were DEXA scanned and included in the study. We calculated FRAX scores and recorded bone biochemical markers, comprising serum Alkaline Phosphatase (sALP), Calcium (sCa) and Phosphate (sPO).

Results TDF treated patients had lower hip T-scores compared to controls ($p = 0.02$). On univariate analysis factors associated with a hip T-score < 1 included older age, lower BMI, smoking and TDF exposure ($p = < 0.05$). On multivariate analysis the same factors were associated with a hip T-score < 1 , but TDF lost significance. For the development of a major osteoporotic fracture the pre-DEXA FRAX score was 4.77% compared to 4.33% (post-DEXA FRAX) ($p = 0.9$) and for a hip fracture this was 0.54% (pre-DEXA FRAX) and 0.77% (post-DEXA FRAX) ($p = 0.5$). The pre-DEXA FRAX score was a significant predictor of the post-DEXA FRAX treatment recommendation ($p = < 0.001$). TDF therapy was associated with increased sALP after 12-months, but this was not significant. No change was observed in pre-treatment sCa and sPO levels compared to those after 12-months exposure ($p = 0.5$ & 0.09 respectively).

Conclusion Our results demonstrate the FRAX score alone can accurately predict the risk of developing an osteoporotic fracture in TDF treated CHB patients. This potentially obviates the need for DEXA scanning and the associated costs. The relationship between sALP and TDF is noteworthy, but bone parameters are of limited use in predicting BMD changes. Although BMD loss in TDF treated CHB patients remains unproven, we demonstrate the use of the FRAX score may determine those at risk of osteoporotic fractures in CHB.

Disclosure of Interest None Declared.

PWE-145 **RESTROSPECTIVE REVIEW OF HEPATITIS B DATABASE**

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Introduction Chronic Hepatitis B Virus (HBV) affects 350 million people worldwide with potential serious consequences. The aim of this study was to measure adherence at Sandwell and West Birmingham Hospitals (SWBH) NHS Trust to recent guidance regarding HBV assessment and treatment.

Methods A retrospective review of the SWBH HBV database (2003–2012) was undertaken. On the basis of European Association for the Study of the Liver (EASL) guidance, attainment of the following outcomes (standard 100%) was calculated: ALT measurement, liver ultrasound (US) examination, HBV DNA measurement, HIV testing, further liver assessment where indicated (using biopsy or Fibroscan) and use of antiviral therapy where indicated.

Results 322 patients with HBV were identified. Attainment of the EASL standards were as follows: ALT measurement 92%, liver US examination 80%, HBV DNA measurement 95%, HIV testing 72%, further liver assessment where indicated 82% and use of antiviral therapy where indicated 100%.

Conclusion In general patients were managed according to EASL guidance. Liver US examination was not 100% mainly because patients failed to attend their appointment. HIV testing was not 100% as routine testing in HBV patients was introduced only in 2008. Further liver assessment with biopsy was deferred in a number of cases after discussion between patient and physician; recent acquisition of a Fibroscan at SWBH should increase the proportion of appropriate patients undergoing further liver assessment. It is encouraging that all patients received antiviral therapy where indicated. It is hoped that data from this review and recent acquisition of a Fibroscan at SWBH Trust will promote improved adherence to guidelines.

Disclosure of Interest None Declared.

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PWE-146 **RELAXIN IS A RENAL VASODILATOR IN EXPERIMENTAL MODELS OF CIRRHOSIS AND A POTENTIAL NOVEL THERAPY FOR HEPATORENAL SYNDROME IN HUMANS**

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Introduction Hepatorenal syndrome (HRS) is a feared complication of cirrhosis with a high mortality rate and limited treatment options. The hallmark features of HRS are profound renal vasoconstriction, resulting in a functional renal failure but with normal kidney histology. The peptide hormone relaxin (RLN) mediates maternal haemodynamic adaptations to pregnancy, including increased renal blood flow (RBF) and glomerular filtration rate (GFR). We hypothesised that RLN could beneficially modulate RBF in cirrhosis and HRS.

Methods Cirrhosis, with reduced RBF, was induced in rats by 16 weeks of intraperitoneal (i.p.) carbon tetrachloride (CCl₄) and decompensated biliary cirrhosis by 3 weeks bile duct ligation (BDL). We measured the effect of acute intravenous (i.v.) and extended (72 hr) subcutaneous (s.c.) RLN on systemic haemodynamics, RBF, GFR and organ histology. Subgroups of rats were co-treated with the nitric oxide (NO) synthase inhibitor L-NAME. Blood oxygen