PMO-163 FIBROSCAN DELINEATES SIGNIFICANT FIBROSIS BETTER THAN THE KING'S FIBROSIS SCORE, APRI AND FIB4 SCORE WHEN CORRELATED TO LIVER BIOPSY IN A LARGE MONOCENTRIC COHORT OF HEPATITIS C PATIENTS

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Introduction In the context of consideration of antiviral therapy for hepatitis C virus (HCV), fibrosis assessment is critical. An increasing array of non-invasive blood panels are in use; in addition Liver Stiffness Measurements (LSM) by Fibroscan is an established clinical tool in some clinical centres. Liver biopsy is however still perceived as the "silver" standard for fibrosis assessment in HCV. The aim of our study was to evaluate the diagnostic accuracy of LSM, King's Fibrosis Score (KFS), APRI (aspartate aminotransferase to Platelet Ratio) and FIB4 score (age, platelets, aspartate aminotransferase and alanine aminotransferase) in predicting significant fibrosis (Ishak score F3–F6) and cirrhosis (F5–F6) in a large monocentric cohort of HCV patients.

Methods Retrospective data collection was performed on 484 patients with hepatitis C that underwent both Fibroscan and liver biopsy at King's College Hospital between November 2006 and November 2011. Data were analysed to correlate liver biopsy results with LSM, KFS, APRI and FIB4 score. Each biopsy was assessed via Ishak score with three specialist Liver Histopathologists. All Fibroscans were performed by two trained operators. Each test was correlated against liver biopsy findings using ROC curves, sensitivity and specificity.

Results For predicting significant fibrosis (F3–F6), the area under receiver operating curves 95% CIs were 0.81 (0.77 to 0.85, $p<0.001$) for LSM; 0.71 (0.66 to 0.76, $p<0.001$) for KFS; 0.71 (0.66 to 0.76, $p<0.001$) for APRI and 0.79 (0.73 to 0.84, $p<0.001$) for FIB4 score. In the diagnosis of cirrhosis, the area under receiver operating curves was 0.83 (0.76 to 0.9, $p<0.001$) for LSM, 0.72 (0.64 to 0.79, $p<0.001$) for KFS, 0.67 (0.59 to 0.75, $p<0.001$) for APRI and 0.77 (0.68 to 0.85, $p<0.001$) for FIB4 score respectively. A LSM threshold of 7.8 kPa had a 68% sensitivity and 81% specificity to detect significant fibrosis and a threshold of 10.25 kPa had a sensitivity of 75% and a specificity of 80% in detecting cirrhosis.

Conclusion In our real-life monocentric HCV population, liver stiffness measurement via Fibroscan performed best in prediction of both moderate fibrosis and cirrhosis in comparison to the KFS, APRI and FIB4. However, all these panels performed reasonably in delineating significant fibrosis and cirrhosis. An increased availability of Fibroscan, coupled with non-invasive fibrosis panels in primary or outreach settings can radically improve the clinical assessment and evaluation of HCV patients for HCV therapy, while also defraying cost and improving safety and acceptability from a patient perspective. Non-invasive fibrosis assessment needs to be widely available.

Competing interests None declared.

PMO-164 HCV P22 ANTIGEN TEST: SEROLOGICAL RESPONSE AND DIAGNOSTIC ADVANTAGES

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Introduction The p22 ELISA stains for part of the nucleocapside of hepatitis C virus (HCV) and has recently become commercially available. The current British Society of Gastroenterology guidelines recommend ELISA towards antibodies against HCV Ab. Only 27% of patients with acute HCV are able to clear the virus,[1] however, early treatment in the acute phase is known to improve outcomes and rates of Sustained Virological Response.[2] This has been advocated in certain subgroups (patients co-infected with HIV or moderate-severe liver disease). This case demonstrates the serological response during an acute hepatitis infection with regards to ALT, HCV Ab, HCV RNA and the new p22 HCV antigen test.

Methods Sequential blood samples were obtained from a patient with end stage renal failure who developed acute HCV infection while on haemodialysis. Liver function tests, ELISA to antibody to HCV, HCV RNA PCR and antigens to p22 were performed retrospectively.

Results The p22 ELISA result became positive at an earlier time point before a rise in ALT or the ELISA HCV antibody result.

Conclusion The p22 ELISA is a robust and reliable test that allows for earlier detection of HCV viraemia. This would be of crucial importance in patient subgroups that need early treatment in the acute phase or in populations where early detection would be required to reduce risk of cross-transmission (eg, haemodialysis units). This test offers several advantages over PCR, which though sensitive, involves complex methodology that makes it unsuitable for diagnostic laboratories. Further investigation would be required to establish the role of treating during the hyper-acute phase, in patients with negative HCV antibody and normal ALT.

Abstract PMO-164 Table 1

Week	ALT (IU/l)	HCV Ab result	HCV antigen result	HCV RNA PCR (IU/ml)
0	26	−ve	−ve	−ve
2	22	−ve	+ve (3474)	140 000
8	394	−ve	+ve (>20 000)	2.1 m
11	474	+ve	+ve (2399)	106 000
16	181	+ve	+ve (6573)	558 000

Competing interests None declared.

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PMO-165 POTENTIAL IMPACT OF PROTEASE INHIBITORS IN THE SOUTH WEST PENINSULA HEPATITIS C POPULATION

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Introduction Treatment of hepatitis C virus (HCV) with pegylated interferon and ribavirin achieves a sustained viral response (SVR) in 40%–50% of genotype 1 patients.[1] Protease inhibitors (PIs) increase SVR rates in treatment naïve genotype 1 patients to 63%–75%, but it is in those who failed to achieve an SVR with previous treatment that the most significant differences have been observed, particularly in those who relapse.[1] This study assessed the potential beneficial impact of PIs in a real world population undergoing HCV treatment in the South West Peninsula, identifying the number of eligible patients and considering population-specific issues to treatment.

Methods All patients treated for HCV in the South West Peninsula between January 2008 and December 2010 were identified by HCV

nurse specialists. Proformas identifying treatment centre, patient characteristics, viral response, treatment compliance and outcome were completed and entered into a database for further analysis. Viral data from genotype 1 HCV patients identified those who relapsed, had viral breakthrough or were non-responders. Non-responders were further categorised into partial and null responders.
Results 361 patients from five centres (Plymouth, Exeter, Truro, Torbay and Barnstaple) were identified. 164/361 patients (45.4%) had genotype 1, of which 11.6% (n=19) were cirrhotic. 40.8% (n=67) achieved SVR, 15.9% (n=26) relapsed and 4.3% (n=7) had viral breakthrough. Of 33 (20.1%) non-responders, 20 were null responders, 11 partial responders and 2 had insufficient viral load data. 9.1% (n=15) stopped treatment early, 7.9% (n=13) were lost to follow-up and 1.8% (n=3) had no post-treatment viral load data available. 17 genotype 1 patients were treated in prison, of which, 11.7% (n=2) stopped treatment early and 41.1% (n=7) were lost to follow-up. Of the 97 (59.2%) genotype 1 cases who did not achieve SVR, at least 44/164 (26.8%) would have a very clear benefit from re-treatment with PIs.
Conclusion A significant number (26.8%) of genotype 1 treatment-experienced patients treated in the South West would benefit from re-treatment, with addition of a PI to their HCV treatment. Adherence with treatment and reliable follow-up of patients are crucial for safe treatment with PIs. Despite the provision of a good HCV service, a significant number of cases did not attend for prearranged reviews. At present, 7.9% of cases treated were lost to follow-up, with prisoners disproportionately unlikely to attend planned clinics.

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PM0-166 EARLY EXPERIENCE WITH TELAPREVIR FOR PATIENTS WITH ADVANCED FIBROSIS OR CIRRHOSIS

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Introduction The direct-acting HCV protease inhibitor telaprevir has recently been licensed for treatment of chronic genotype 1 HCV infection, and promises significant improvements in sustained virological response for these patients. However the patients who may benefit most from novel HCV therapies, namely those with advanced fibrosis or cirrhosis who have previously failed to respond to pegylated interferon (pegIFN) and ribavirin treatment, are relatively poorly represented in the telaprevir clinical trials. Efficacy, safety and tolerability were assessed in patients with genotype 1 HCV and advanced fibrosis/cirrhosis who have received telaprevir-containing treatment at the Royal London Hospital.
Methods Laboratory results and case notes were reviewed for all patients treated with pegIFN, ribavirin and telaprevir at the Royal London Hospital between September 2011 and January 2012.
Results Eight patients with genotype 1 HCV had commenced telaprevir-containing treatment. All had advanced fibrosis/cirrhosis (median Ishak score 5, range 4–6). One was treatment-naïve, three had previously failed to respond to pegIFN/ribavirin and four had relapsed after therapy. All patients had completed at least 4 weeks of telaprevir-containing therapy. With one exception, all patients achieved undetectable HCV RNA at week 4 of treatment; the patient who did not had a viral load of 168 IU/ml at week 4 and undetectable HCV RNA at week 8. One patient had completed 12 weeks of therapy, with undetectable HCV RNA. The most common side effects were fatigue (8/8), pruritis (4/8), rash (3/8), anal pain (3/8), depression (3/8), nausea (3/8), gastrointestinal disturbance (2/8) and oral candidiasis (2/8). Most side effects were successfully managed, although telaprevir was stopped in two patients at week 8 due to worsening rash and one patient withdrew from all therapy at week 4 due to tolerability. The most common laboratory abnormality was an early, transient rise in bilirubin (3/8). Significant anaemia (Hb).
Conclusion Telaprevir in combination with pegIFN and ribavirin appears efficacious in patients with advanced fibrosis or cirrhosis, who have previously failed treatment with pegIFN and ribavirin alone. However, the incidence of significant side effects in this subgroup of patients is high and necessitates frequent follow-up with medical support. Side effects, particularly rash, may limit duration of telaprevir treatment. Whether this impacts on sustained virological response remains to be seen.

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PM0-167 PRESENCE OF VIABLE HCV RNA IN MONOCYTES AT THE END OF TREATMENT PREDICTS RELAPSE IN GENOTYPE 3 HCV INFECTION

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Introduction Although genotype (G)3 HCV is generally regarded as "easy to treat", based on clinical trial data showing response rates of up to 80%, real world studies have shown substantially lower rates of treatment response (45%), particularly in patients with advanced fibrosis or cirrhosis. Most patients who fail treatment for G3 HCV initially respond to antiviral therapy, but relapse after the end of treatment. HCV RNA has been demonstrated in peripheral blood mononuclear cells from patients with chronic HCV, but whether viral replication occurs in these cells remains controversial. This study tests the hypothesis that viable HCV in monocytes at the end of treatment predicts relapse in patients with G3 HCV.
Methods CD14 (+) monocytes from patients at the end of treatment for G3 HCV were isolated and fused with HuH7 cells. The fused cells were maintained in tissue culture for up to 5 days, before extraction of HCV RNA and quantification by PCR. p Values were derived using the Mann–Whitney U test for comparison of non-parametric data. Results are expressed as mean ± SEM.
Results HCV RNA increased up to fivefold in fused compared to unfused monocytes. Viral protein production was demonstrated in fused cells by indirect immunofluorescence, confirming that viral replication occurs in the fused cells. Fused monocytes from patients who relapsed after treatment showed a significantly greater increase in HCV RNA than those from patients with a sustained virological response (246.8±103.9%, compared to 5±33.9%, p=0.02).
Conclusion These data demonstrate that the presence of replication-competent HCV in monocytes at the end of treatment predicts