whether there is a "spill-over" of hepatic anti-inflammatory mediators into the systemic, circulatory, compartment.

Method Median levels (pg/ml) of hepatic IL-1ß, IL-4,-6,-10,-12,-17, IFN-Y, MCP-1, TNF-α, TGF-ß1 were measured using proteome arrays in 10 human AALF explants and 8 normal control liver tissue samples.

Hepatic and serum levels of IL-1ß, IL-4,-6,-10,-12,-17, MCP-1, TNF-α, TGF-ß1 were measured in 200mg/kg i.p. APAP treated male C3H/HeH mice (n=5 severe necrosis, n=5 moderate necrosis) and 5 control mice.

Regional levels (portal vein (PV)), hepatic vein (HV), arterial (art)) of TNF-α, IL-10 were determined using ELISA in 3 AALF patients at time of liver transplantation.

Results In human AALF, hepatic levels of IL-6 (115 vs 75; p=0.02), IL-10 (1.8 vs 0.6; p=0.03), TGF-ß1 (3009 vs 1323; p<0.0001) were elevated in AALF compared to controls while IL-1ß, IL-12, IL-17, IFN-Y and TNF-α were unchanged. Higher hepatic levels of IL-4 (37 vs 25; p<0.01), IL-10 (90 vs 66; p<0.01), IL-12 (11 vs 7.8; p<0.01) and TGF-ß1 (2521 vs 540; p<0.01) were detected in mice with severe hepatic necrosis compared to those with moderate necrosis and normal controls. Similar to human AALF, serum pro- (IL-6 (146 vs 13; p<0.01), IL-1ß (104 vs 62 (p=0.07)) and anti-inflammatory cytokines (IL-4 (3 vs 0.8; p<0.01), IL-10 (47 vs 1; p<0.01) were elevated compared to normal controls during murine AALF.

Conclusion We demonstrate a hepatic inflammatory microenvironment favouring resolution of inflammation/tissue repair processes. In vivo hepatic production and systemic "spill-over" of the immunosupressive cytokines is observed and may account for functional monocyte deactivation and the marked predisposition to sepsis in AALF. The marked similarities in anti-inflammatory mediator profiles between human and murine models of AALF provide a rationale on which to base the studies examining evolution of disease and development of immunomodulatory strategies to ameliorate acute liver injury and promote tissue repair.

P101 FK STIMULATION OF HEPATITIS C VIRUS-SPECIFIC AND NONSPECIFIC PERIPHERAL BLOOD MONONUCLEAR CELL OF PATIENTS ON WAITING LIST TO EVALUATE AND TAILOR IMMUNOSUPPRESION BEFORE ORTHOTOPIC LIVER TRANSPLANTATION

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Introduction We previously found that FK did not induce a severe reduction of immune response compared to other clacineurin inhibitor (ILTS 2009 oral presentation).

Aim We aimed to evaluate the in vitro effect of tacrolimus on hepatitis C virus (HCV)-specific immune response by ELISpot to establish early the possible effect of immunosuppression and so tailoring immunosuppressive schedule before OLTx to minimize or delay HCV recurrence.

Method Twenty-five HCV+ve patients (20 male and 5 female) on waiting list were enrolled. Blood samples were taken and at least on $2-2.5\times10^5$ cells per well ELISpot was performed to evaluate IFN-specific response after coculturing with 1 ng/ml or 5 ng/ml of FK for 24 h. CMV and a specific stimulation with PMI-Ionomicin were used as control on HCV patients. Ten healthy donors were used as control.

Results After 24 h of FK stimulation, PMA-Ion IFN-response was reduced in all patients (p<0.05) compared to basal values both with 1 ng/ml that 5 ng/ml while CMV- specific showed reduction only when cocultured with 5 ng/ml. Among patients on waiting list, we had that 8 out 25 had a major reduction of HCV and CMV specific response (p <0.05) while 17 out 25 had no statistical significant changes in their IFN response.

Abstract P101 Table 1 Results

Results				
Patients parameters	**HCV**	**CMV**	**PMI-Ion**	**HD-PMA-Ion**
Age (y, mean SD)	55, 3	55, 3	55, 3	35, 6
Male	20/25	20/25	20/25	7/10
Female	5/25	5/25	5/25	3/10
HCV-RNA (IU/mL mean SD)	310 232×10^3	n.d.	n.d.	n.d.
Genotype				
1a/1b	23/25			
Non-1	2/25			
Immunological parameters				
IFN-ELISpot (SFC) in	17/25	25/25	25/25	10/10
T0 without stimulation	65 25	192 103	225 100*	272 113*
FK stimulation 1 ng/ml	58 19	176 98	176 88*	200 126*
FK stimulation 5 ng/ml	52 50	128 42*	150 45*	133 23*
IFN-ELISpot (SFC) in	8/25 pts			
T0 without stimulation	61 15*			
FK stimulation 1 ng/ml	41 7*			
FK stimulation 5 ng/ml	34 5*			

*p<0.05; p>0.05.

Conclusion Based on these results and our previous data, ELISpot assay before OLTx may useful to establish the impact of immunosuppressive schedule. In those having a major reduction of HCV specific immune response after CNI stimulation (FK) a different drug should be used to minimize or delay the possible HCV recurrence. Further studies are required to establish in vitro effects.

P102 THE UTILITY OF RADIOISOTOPE BONE SCANS IN THE LIVER TRANSPLANT ASSESSMENT FOR HEPATOCELLULAR CARCINOMA

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Introduction The incidence of skeletal metastases from hepatocellular carcinoma (HCC) is estimated to be 2–16%. It is well established that radioisotope bone scans can detect cancer earlier than cross sectional imaging. The role of bone scans in pre-transplant assessment has been discussed in the literature but its place in the assessment algorithm is not clearly established.

Aim The aim of this study is to determine the utility of radioisotope bone scans in patients with a diagnosis of HCC undergoing transplant pre-assessment.

Method Radioisotope bone scan results were reviewed for all patients undergoing liver transplant assessment for HCC at our unit from 1989 to 2009. Patients were initially selected for transplant assessment based on favourable HCC staging on cross sectional imaging. Patients undergoing bone scan had the result reviewed retrospectively as normal or abnormal. All abnormal scans we then reassessed against all available imaging and classified as showing benign or malignant changes. Patient outcomes were considered in relation to bone scan results.

Results During this period 216 patients with a primary or secondary diagnosis of HCC were assessed for liver transplantation. Two hundred and three patients were listed for transplant and 148 were eventually transplanted. The results of their bone scans are as below (Abstract P102 Table 1).

Abstract P102 Table 1 Results

HCC patients	Number	Radioisotope bone scan		True positive
		Performed	Positive	
Assessed	216	131 (60%)	25 (12%)	1 (0.5%)
Listed	203	125 (61%)	22 (11%)	1
Transplanted	148	89 (60%)	12 (8%)	0
Not transplanted	55	36 (65%)	10 (18%)	1
Not listed	13	6	3	0

Amongst patients listed for transplant, 22 (11%) cases had abnormal bone scans with 12 cases in transplanted group showing false positive results for reasons including degenerative changes, healing traumatic fractures and tracer uptake in gynaecomastia. One patient had a scan with high suspicion for bony secondaries. This patient initially listed for transplant was removed from the list due to active substance misuse, and subsequently became too ill before bony abnormalities could be confirmed. The recurrence rates of HCC were 12.5 % in transplanted patients who underwent bone scans and 9% in those transplanted without a bone scan.

Conclusion Bone scans were not performed as rigorously as expected with 40% of listed patients with no prior radioisotope imaging. However there were no significant differences in recurrence rates in those that did and did not have bones scans. In a population of patients assessed for liver transplant with cross sectional imaging indicating HCC to be within transplant criteria bone scans had a false positive rate of 18% (24/131). The result of bone scanning did not influence the decision to list with only 1 patient exhibiting feature of bony metastases. This patient was subsequently removed from the list for other reasons.

P103 CLINICAL UTILITY OF MYOCARDIAL PERFUSION IMAGING IN LIVER TRANSPLANT ASSESSMENT PATIENTS

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Introduction Coronary artery disease (CAD) is associated with increased short-term morbidity and mortality following liver transplantation. As a result, the AASLD recommends that high risk individuals should undergo CAD evaluation during transplant assessment. However, CAD is often subclinical in these patients and remains a diagnostic challenge. Myocardial perfusion imaging (MPI) is a sensitive predictor of CAD in non liver populations but its clinical utility in this setting remains unclear.

Aim To determine if routine MPI in "high risk" liver transplant assessment patients influences the listing decision, and to determine if a positive MPI identifies patients at risk of an early cardiac event (CE) post transplant.

Method Retrospective study of 623 patients assessed for elective liver transplantation 01/2007–03/2010. The local criteria for CAD evaluation with MPI are; known or history suggestive of CAD, diabetes, smoking history, and peripheral/carotid vascular disease. A CE was defined as myocardial infarction, cardiac arrest, cardiogenic pulmonary oedema or complete heart block (Lee *et al* 1999) by 90-days post transplant.

Results One hundred and six patients (17%) underwent MPI. 7, 96 and 3 patients had a positive, low risk and indeterminate scan, respectively. The mode of cardiac stress induction did not influence the likelihood of a positive MPI (adenosine 5/76, dobutamine 0/7, exercise 2/20, p=0.657). The only patient factor predictive of a positive scan was known CAD (OR 24.2;95% CI 4.1 to 143.0, p<0.001). The frequency of positive MPI was similar in those who were and were not listed for transplantation (6.9% vs 6.5%, p=0.647). Of the 31 patients not listed, MPI influenced the decision making process in 1 individual. Two hundred and fifty two of the 384 listed patients were transplanted by 03/2010. The patients who had undergone MPI (no:40) were older (58.2 vs 52.6 years, p=0.001) than the non MPI patients, were more likely to be male (80.0 vs 60.8%, p=0.021), and were more likely to have CAD (22.5 vs 1.9%, p<0.001), diabetes (72.5 vs 18.4%, p<0.001), NAFLD (22.5 vs 3.3%, p<0.001), hypertension (32.5 vs 11.4%. p=0.001), and a smoking history (75.0 vs 55.2%, p=0.023). 10 patients (4.7%) had a CE during the specified time period following transplantation. The CE rate (8.8 vs 3.9%, p=0.198) and 3-month mortality rate (10.8 vs 7.7%, p=0.361) were similar for patients who did and did not undergo MPI. Amongst MPI patients a positive scan predicted a CE with a sensitivity of 33.3%, specificity of 90.3% and NPV of 93.3%, and mortality with a sensitivity of 0%, specificity of 87.9% and NPV of 87.9%.

Conclusion MPI is not a clinically useful tool in patients undergoing liver transplant assessment.

P104 SERUM FERRITIN CONCENTRATION MAY PREDICT WAITING LIST MORTALITY BUT NOT INDEPENDENT OF MODEL FOR END-STAGE LIVER DISEASE SCORE: EVALUATION OF A COHORT OF 422 PATIENTS

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Introduction Recent data suggest that serum ferritin (SF) concentration predicts mortality in patients awaiting liver transplantation (LT).

Aim To test SF concentration as a predictor of waiting list (WL) mortality.

Method Retrospective analysis of all patients assessed at our centre for LT over a 4-year period.

Results Patients with acute liver failure (138), amyloid (15), multiple organ transplants (14) and re transplantation (18) were excluded. Of the remaining 422 listed patients for LT, 45 died on the wait list (11%), 26 (6%) were de-listed and 350 (83%) transplanted. Men comprised 64%. SF was analyzed as a continuous and categorical variable. Patients were classified into 3-groups according to assessment SF (<200, 200–400 and >400 ug/l), (Walker et al Hepatology 2010;15:1683). There was a significant difference in gender distribution (p=0001), listing model for end-stage liver disease (MELD) (p=0.0001), etiology of cirrhosis (p=0001) between groups, with alcoholic cirrhosis and HCV representing 45% and 35% respectively of SF >400ug/l group. Univariate analysis demonstrated age at listing (HR 0.97, p=0.013), listing MELD (HR 0.86, p=0.0001), listing Na (HR 1.10, p=0.0001), SF (HR 1.0,p=0.002), SF 200-400 (HR2.86, p=0.001) as predictors of WL mortality; whilst SF>400 was insignificant (HR 2.14,p=0.078). On multivariate analysis, only MELD score (p=00001), age at listing (p=0.002) and serum Na (0.011) were significant predictors of listing outcome. Serum Ferritin analyzed as continuous or categorical variable failed to predict WL mortality. ROC curve analysis showed AUROC for MELD of 0.73 whilst that for SF of 0.65. This analysis determined a cut-off for SF of 266ug/l as significant predictor of WL mortality. Interestingly, SF 200–400 (HR 3.9, p=0.002) and SF >266 ug/l (as determined by ROC curve analysis, HR 2.9, p=0.006) were significant indicators of 1-year post-LT survival. However, age, gender, presence of HCC, MELD score and Na level at transplant failed to predict 1-year post-LT survival.

Conclusion Although SF may appear to predict listing outcome, it failed to do so independent of established predictors of outcome such as age, MELD and serum Na in this cohort. However, SF