due to anaemia occurred in 3.3%, 0.8% and 0.6% in T8PR, T12PR and control arms, respectively.

Conclusion A significantly greater proportion of patients achieved SVR with 12-week and 8-week telaprevir-based combination regimens (75% and 69%, respectively), compared with PR48 control arm (44%, p<0.0001). The safety and tolerability profile of telaprevir in the ADVANCE trial was consistent with the profile previously reported, with an improvement in treatment discontinuation rates due to adverse events, including rash and anaemia. These first Phase 3 results confirm the clinical benefit previously reported in Phase 2.

Abstract P70 Table 1 Viral response

	T8PR N=364	T12PR N=363	PR48 N=361
Patients achieving RVR, n (%)	242 (66)	246 (68)	34 (9)
Patients with HCV RNA undetectable at end of treatment (EOT), n (%)	295 (81)	314 (87)	229 (63)
Patients achieving SVR, n (%)	250 (69)*	271 (75)*	158 (44)
Difference in SVR rates, TVR arms vs control, % (95% CI)	25 (18 to 32)	31 (24 to 38)	NA
Patients with relapse, n (%)	28 (9)	27 (9)	64 (28)

*p<0.0001, Denominator is number of patients with HCV RNA undetectable at EOT.

Transplant

P71 A MODEL TO IMPROVE PERFORMANCE OF CURRENT CATEGORY 9 UK LISTING CRITERIA: EARLY LIVER GRAFT DYSFUNCTION. A SINGLE CENTRE COHORT

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M A B Al-Freah, E Dionigi, M J W McPhail, M Foxton, G Auzinger, M Rela, N D Heaton, J G O'Grady, M A Heneghan, W Bernal, J A Wendon. *Institute of Liver Studies, King's College Hospital, London, UK*

Introduction Current super urgent criteria for listing for early liver graft dysfunction (ELGD) in the UK (category 9, C9C) is defined as fulfilling 2 out of 4 of the following criteria within 7 days post liver transplant (LT): AST >10 000IU/l, INR >3, Lactate >3 mmol/l and absence of bile production. We demonstrated that these criteria have critically low sensitivity in predicting early post LT death or need for re-LT (Al-Freah, *et al. Hepatology* 2009;**50** Suppl 4:A148).

Aim To develop an improved predictive model for early re-LT or death using early post-LT clinical parameters.

Method Retrospective study of all patients transplanted at our centre 1 January 2000 to 31 December 2008. Daily clinical and laboratory parameters for the first 7 days post LT were reviewed. These included AST, bilirubin, INR, lactate, vasopressor requirement and/or haemofiltration.

Results Over the study period, 1286 patients underwent first LT at our centre. Patients excluded (28) because of re-LT for hepatic artery thrombosis (22), died on table (5) and one re-LT because of donor cancer. We analysed data on 1258 patients (median age 51 (16–74) years (16–74), 60% male). The most common aetiology was viral hepatitis in 303 patients (24%) and alcohol related liver disease in 227 patients (18%); 181 patients (14.4%) with hepatocellular carcinoma. Median MELD score was 16 (6–40). Death or re-LT rate at 3 months was 9.9% (124). Only 27 (2.1%) fulfilled C9C at 3 months: 17 (63%) of those died or had re-LT within 3 months (p<0.001). C9C had sensitivity of 14% (9.8–17%), specificity 99% (98–99%), positive likelihood ratio (LR+) 15.533 (7.41–32.73) and negative likelihood ration (LR–) 0.87 (0.83–0.91). Abstract P71 table 1 shows the univariate and multivariate analyses of predictors of 3 months liver-related death or re-LT using Cox regression hazard method. Accordingly, we generated a model comprises any 1 of the following 5 to predict ELGD and death or re-LT: vasopressor requirement at day D7, D1 lactate >3 mmol/l, D7 AST >500 IU/l and D7 bilirubin >100 μmol/l. Those scored 1, 2, 3, 4 or 5 points had OR of risk of death/re-LT within 3 months of 1.26 (0.897–1.766, p=0.184), 1.345 (0.8817–2.051, p=0.171), 2.811 (1.669–4.732, p=0.0001), 15.561 (7.425–32.611, p<0.0001) and 36.509 (13.188–101.074, p<0.0001), respectively. 85 of 124 patients who had a 3 month liver related outcome met this criterion compared to 16 who met C9C. This gave sensitivity 68% (58–77%), specificity 67% (64–70%), LR+ 2.08 (1.77–2.45) and LR– 0.48 (0.36–0.63).

Abstract P71 Table 1 Cox regression hazard analysis of predictors of 3 months liver related deaths or re-LT

	Univariate		Multivariate	
Variables	OR (95% CI)	p Value	OR (95% CI)	p Value
D7 AST >500 IU/l	2.188 (1.162 to 4.121)	0.0159	1.807 (0.953 to 3.425)	0.0711
D1 lactate >3 mmol/l	2.500 (1.739 to 3.594)	<0.0001	1.939 (1.400 to 2.872)	0.001
D7 bilirubin >100 mol/l	1.530 (1.149 to 2.036)	0.0037	1.469 (1.101 to 1.960)	0.0094
D7 on vasopressors	5.241 (3.143 to 8.739)	<0.0001	4.067 (2.395 to 6.906)	<0.0001

Conclusion The new model is simple to use and significantly improved the sensitivity of detection of severe ELGD. Validation in another cohort of LT patients is warranted.

P72 LIVER TRANSPLANTATION FOR FAMILIAL AMYLOIDOSIS; LONG-TERM DATA FROM THE FAMILIAL AMYLOID POLYNEUROPATHY WORLD TRANSPLANT REGISTRY (FAPWTR)

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[1]A Stangou, [2]H Wilczek, [2]M Larsson, [3]O Suhr, [2]Bo-G Ericzon. *[1]NHS Amyloid Treatment Programme, Liver Unit, Queen Elizabeth Hospital, University Hospital Birmingham, UK; [2]Transplantation Surgery, Center for Surgical Sciences, Karolinska Institute, Stockholm, Sweden; [3]Department of Medicine, Umea University Hospital, Umea, Sweden*

Introduction Liver transplantation (LT) is the only available treatment for familial amyloid polyneuropathy (FAP). The Familial Amyloid Polyneuropathy World Transplant Registry (FAPWTR), established shortly after LT was introduced as potential treatment for FAP in 1990, is a centralised service based in Karolinska Institute in Sweden for the collection, monitoring and analysis of international data on LT for FAP.

Aim We present here the long-term FAPWTR results on the 20 years anniversary of LT for FAP.

Results Between April 1990 and January 2010, data on 1782 liver transplant procedures and regular follow-up were reported to the FAP registry from 70 transplant centres in 18 countries. Annual international transplant activity for FAP has remained stable at 80–120 procedures since 1996. Among those 866 liver transplants were performed in Portugal, 216 in France, 130 in Sweden, followed by USA 79, UK 78, Brazil 77, Spain 74, Japan 65. The Mediterranean Val30Met transthyretin (TTR) mutation was identified in 83% of cases. A further 50 different variants were reported, collectively referred to as non-ValMet30, and additionally a dozen of non-TTR mutations such as Glu526Val and ApoA1 Gly26Arg. The Ser77Tyr and Thr60Ala mutations appear to be the commonest among non-Val30Met variants. Median age at LT was 38 years (range 21–72 years), 57% of patients were male. Median disease duration prior to transplantation was 3 years (range 0–30 years). Of patients in the Val30Met group 98% received isolated LT, while 11% of non-Val30Met cases required either simultaneous (9%) or sequential heart and liver transplant (2%). Overall 1-, 3-, 5-, and 10-year survival after LT in the entire FAP population including all variants was 86.9%, 81.8%, 77.6% and 71%. Five-year and 10-year survival in the Val30Met group was 80.9% and 73.4% respectively, significantly superior to 57.8% and 43.9% in the non-Val30Met group (p<0.001).

Commonest cause of death was cardiac related events (24%), followed by sepsis (23%) or liver related complications (14%). Disease duration prior to transplantation, initial presentation with autonomic rather than peripheral neuropathy, TTR mutation, and modified body mass index (mBMI) of <600, indicating poor nutritional status, were identified as significant factors influencing survival after LT ($p<0.01$).

Conclusion Liver transplantation is rational and effective treatment for FAP with excellent long-term outcomes and 10-year survival >70%. Type of mutation, nutritional status, disease duration and degree of autonomic involvement are significant prognostic factors.

P73 PRELIMINARY RESULTS OF THE STUDY OF ACUTE LIVER TRANSPLANT (SALT): NSAID EXPOSURE AND RISK OF ACUTE LIVER FAILURE LEADING TO TRANSPLANTATION IN 7 EUROPEAN COUNTRIES

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[1]D Thorburn, [2]E Gulmez, [2]S Lignot, [3]D Larrey, [4]C de Vries, [5]S Perez-Gutthann, [6]J L Montastruc, [7]M Sturkenboom, [8]J Benichou, [9]G Velo, [10]A Caputi, [2]F Salvo, [2]F Hamoud, [2]S Micon, [2]R Lassalle, [2]J Jove, [3]G P Pageaux, [11]Y Horsmans, [12]J Bernuau, [13]F Bissoli, [7]B Stricker, [14]A Gatta, [15]E Monteiro, [16]I Vafiadis, [17]A McCormick, [7]H Metselaar, [7]E Sen, [4]A Nightingale, [2]P Blin, [2]N Moore. *[1]Royal Free NHS Trust, Liver Unit; [2]University Bordeaux Segalen, Bordeaux; [3]CHU St Eloi Hospital, Montpellier; [4]Bath University, Bath; [5]RTI Health Solutions, Barcelona; [6]CHU de Toulouse, Toulouse; [7]Erasmus University MC, Rotterdam; [8]CHU de Rouen, Rouen; [9]University of Verona, Verona; [10]Policlinico Universitario, Messina; [11]Louvain Catholic University, Louvain; [12]Beaujon Hospital, Clichy; [13]Clinica San Gaudenzio, Novara; [14]Padua University Hospital, Padua; [15]Santa Maria Hospital, Lisbon; [16]Athens University School of Medicine, Laiko General Hospital, Athens; [17]St. Vincent's University Hospital, Dublin*

Introduction The risk of acute liver failure (ALF) related to NSAIDs is still discussed and the European Medicines Agency requested a study investigating this. University Bordeaux Segalen conducted the study independently.

Aim To estimate the incidence rates of ALF leading to registration for liver transplantation (LT) in patients exposed to NSAIDs.

Method Multinational, multicentre, case-population study performed in France, Greece, Ireland, Italy, the Netherlands, Portugal, and the UK retrospectively evaluating a 3-year period (2005–2007) in adults. Data of ALF cases were sought through liver transplant registries and hospital records. Demographic and clinical data were collected for all ALF cases and drug use information was collected for the exposure window of 30 days prior to index date (ID, initial symptoms of liver disease). For ALF cases exposed to NSAIDs (ATC code M01A), rate per million treatment-years (tt-yrs) was calculated using sales data from IMS. Poisson CIs (95% CI) were estimated.

Results In the seven participating countries, 62 LT centres were identified and contacted, five were excluded (four paediatric, one oncology), and 50 actively contributed data before database lock. Among the 8824 patients identified from LT lists for the period 2005–2007, 500 were cases of ALF: 197 with identified clinical cause, 21 with incomplete or unavailable medical files, and 241 drug-exposed without identified clinical cause. Among the latter, 34 were exposed to at least one NSAID, 123 exposed to other drugs, and 84 were acute drug intoxications. Mean age of NSAID-exposed ALF cases was 43.8 years, 24 were female. Event rates per million treatment-years were 4.4 (95% CI 3.0 to 6.1) for all NSAIDs pooled, 5.6 (2.4 to 11.1) for nimesulide (8 cases), 5.8 (2.8 to 10.6) for ibuprofen (10 cases), 4.5 (1.5 to 10.4) for diclofenac (5 cases), and 4.7 (1.0 to 13.6) for ketoprofen (3 cases). 71 of the 157 non-intoxication cases had been exposed to paracetamol (9.8 per million treatment-years, 95% CI 7.7 to 12.4), and 83 of the 84 intoxications.

Conclusion In seven countries over 3 years only 34 NSAID-exposed ALF cases leading to registration for LT were identified with no differences in incidence rates per million tt-yrs among the most used NSAIDs. Non-overdose paracetamol-associated liver failure was twice more common.

P74 HEPATOCYTE TRANSPLANTATION IN RATS WITH ACUTE LIVER FAILURE USING CELLS LABELLED WITH A CLINICAL GRADE MRI CONTRAST AGENT

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[1]J Puppi, [1]R D Hughes, [2]M Modo, [1]R R Mitry, [1]A Dhawan. *[1]Institute of Liver Studies, King's College London School of Medicine at King's College Hospital; [2]Institute of Psychiatry, King's College London*

Introduction Hepatocyte transplantation is being evaluated as an alternative to orthotopic liver transplant. However, the fate of hepatocytes after transplantation is not well defined.

Aim The aims of the study were to: (1) investigate the possibility of labelling hepatocytes in vitro using superparamagnetic iron oxide nanoparticles (SPIOs), (2) determine the effects of labelling on cell viability and function, and (3) perform in vivo experiments on tracking labelled cells by MRI.

Method Human and rat hepatocytes were labelled in culture for 16 h with clinical SPIOs (12.5 μg Fe/ml) and protamine sulphate (3 μg/ml) as a transfection agent. Cellular iron uptake was determined using Prussian blue staining, and quantified by a ferrozine-based assay. Cell viability and function were assessed using LDH leakage, mitochondrial dehydrogenase activity, [^{14}C]-leucine incorporation, albumin and urea assays. Effects of labelled cells on T2-weighted images were assessed in vitro using a 7-T MR scanner. Intrasplenic transplantation of 2×10^7 male rat hepatocytes labelled with SPIOs (n=4) or non-labelled (n=4) was performed in female recipients 28–30 h after acute liver failure induction by intraperitoneal injection of D-galactosamine. Hepatocytes were also marked with the fluorescent dye CM-DiI. A control group (n=4) received medium injection only. T2*weighted gradient-echo images at 7-T MRI were acquired at day 7 post-acute liver failure induction. Transplanted cells were detected in the liver by PCR for the Y-chromosome (Sry-2 gene) and histological analysis.

Results Mean intracellular iron concentrations were 11.4±SE1.1 pg/cell in human and 8.6±0.3 pg/cell in rat hepatocytes. Cell viability and metabolic function were not significantly affected at these SPIO concentrations. In vitro MRI of SPIO-labelled cells (2000 cells/μl) induced a 50% change in T2 relaxivity compared to non-labelled cells. SPIOs were detected in rat liver as a decrease in the MRI signal intensity 6 days after transplantation in the three survivors. On histology most of the SPIO particles were located in Kupffer cells, indicating the loss of iron oxide particles from hepatocytes. In keeping with this, labelled cells could not be detected in the liver by the fluorescent dye or by PCR for Sry-2 gene.

Conclusion Optimum conditions to label human and rat hepatocytes with SPIOs were determined, which did not affect cell viability or metabolic function, and were sufficient for in vitro MRI detection. However, the clearance of hepatocytes after transplantation limits the value of MRI for assessing long-term hepatocyte engraftment.

P75 IMPAIRED CARDIORESPIRATORY RESERVE IN PRIMARY BILIARY CIRRHOSIS PATIENTS UNDERGOING LIVER TRANSPLANT ASSESSMENT

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[1]J Prentis, [2]D E Jones, [2]M I Trenell, [1]C P Snowden. *[1]Freeman Hospital; [2]Newcastle University*

Introduction It has been previously shown that PBC patients have bioenergetic abnormality in both peripheral and cardiac muscle. In