

## Abstract# 1089

## Poster Board #-Session: P225-II

**Contemporaneous Liver and Orthotopic Kidney Transplantation.** Akin Tekin,<sup>1</sup> Werviston Defaria, Torosaki Kato, David Levi, Seigo Nishida, Genaro Selvaggi, Jang Moon, Eddie Island, Jurichiro Sageshima, George W. Burke, Andrew G. Trakis. <sup>1</sup>Department of Surgery, Miami Transplant Institute, Miami, FL.

**Purpose:** To describe an alternative technique in orthotopic liver-kidney transplantation

**Methods:** A retrospective case review was performed. Between 1995 and 2007, orthotopic placement of the kidney was performed in ten (n=10) out of eightyone (n=81) combined liver-kidney transplants. The mean age of patients was 51, including 6 females and 4 males. The liver transplants were performed using the piggyback technique. A single infrahepatic donor iliac jump graft was used for arterial inflow to the liver and kidney. Renal vein is anastomosed to IVC and ureteroanastomosis with double J stent was performed in all but one case.



One (n=1) patient had previous bilateral nephrectomy. Three (n=3) patients had bilateral nephrectomy and four (n=4) patients had right nephrectomy at the time of the transplantation. Two (n=2) patients had atrophic kidneys and did not require nephrectomy. Three (n=3) patients had one and one (n=1) patient had two previous kidney transplants. Disease profiles were chronic glomerulonephritis associated with HCV cirrhosis (n=4) (two of which had HCC), hepatorenal syndrome associated with HCV cirrhosis (n=1), medullary sponge kidneys with chronic pyelonephritis associated with Caroli's disease (n=1), chronic glomerulonephritis associated with Caroli's disease (n=1), polycystic liver-kidney disease (n=1), HBV glomerulonephritis (n=2).

**Results:** Immediate graft function was satisfactory for both liver and kidney grafts in all cases. Two patients have died within 2 and 4 months from the transplant secondary to early recurrence of hepatitis C. Both of these patients had previous kidney transplants and had been on immunosuppression. Besides these two cases, kidney and liver graft functions are good in all cases. There are no technical complications and they all are in good general condition 2 to 72 months postoperatively.

**Conclusion:** Orthotopic placement of kidney during liver transplant is a good technical alternative when performing complex combined liver-kidney transplants, especially if native nephrectomy is indicated for various reasons.

Liver: Hepatocellular Carcinoma  
and Cholangiocarcinoma Malignancies II

## Abstract# 1090

## Poster Board #-Session: P226-II

**Analysis of Pretransplant Radiologic Staging (PRS) of Hepatocellular Carcinoma (HCC) and Explain Histology in Patients Undergoing Liver Transplantation (OLTx) and Impact on Survival.** Thomas V. Cacciarelli,<sup>1</sup> Fadi Francis,<sup>1</sup> Mohamed Akoad.<sup>1</sup> <sup>1</sup>Liver Transplantation and Hepatobiliary Surgery, Pittsburgh VA Healthcare Center, Pittsburgh, PA. Hepatic allografts are currently allocated to patients with HCC based on pretransplant radiologic staging (PRS) with accurate staging essential to prioritization and outcome. The aim of this study is to assess the accuracy of pretransplant imaging correlated with the explain histology and the effect of tumor understaging on survival.

**Material and Methods:** Sixty-three patients with liver cirrhosis and HCC who underwent OLTx at a single center were retrospectively reviewed. Etiology of cirrhosis was: hepatitis C (78%), alcohol (16%), HBV (2%), cryptogenic (2%) and PSC (2%). Mean fu was 17 months(stage 1-105 mos). All patients underwent triphasic CT scan within 3 months of OLTx. Twenty-eight of 63 pts (44%) underwent pretransplant therapy: 24% radiofrequency ablation, 17% TACE, and 3% both. Using the Milan criteria and TNM staging, the correlation between preoperative CT scanning and posttransplant pathologic staging was analyzed. Survival was calculated using the Kaplan-Meier method.

**Results:** Mean age of recipients at time of OLTx was 55yrs(range 42-69yrs). Pretransplant CT scan underestimated the number of lesions in 48% of patients: 16% had 1; 13% had 2; 6% had 3; and 13% had 4 or more additional lesions. The cumulative size of the tumor on explant was greater than that estimated by the CT scan by more than 1 cm in 49% of patients. The CT scan accurately estimated the tumor size in 47% of patients, overestimated the stage in 13% and underestimated the stage in 40%. Of those, in whom the CT scan underestimated the stage, 30% were found to have stage IIIb disease. Overall 1- and 3-year disease free survival was 80% and 61% respectively. One and 3-yr disease free survival by explant staging was: 87% and 87% stage I/II; 57% and 45% stage III; and 75% and 25% stage IV (p<0.01, stage I/II vs stage III). Tumor recurrence occurred in 8% (5/63) of patients: 5% of stage III, 7% of stage II and 50% of stage IV.

**Conclusion:** Triphasic CT scan does not ensure a high degree of PRS accuracy. Underestimating the stage is associated with increased rate of recurrence and poor long-term survival. Improvements in PRS for HCC are needed for fair organ allocation.

## Abstract# 1091

## Poster Board #-Session: P227-II

**Selection of Liver Transplant Recipients for the Treatment of HCC Based on Adjustable Preoperative Criteria with a Pre-Determined, Center Specific, Five-Year Patient Survival Target.** Dionisios Vrochides,<sup>1</sup> Mazen Hassanain,<sup>1</sup> Jeffrey Barkun,<sup>1</sup> Jean Tchervonkov,<sup>1</sup> Prossato Chaudhry,<sup>1</sup> Marcello Cantarovich,<sup>1</sup> Marc Deschenes,<sup>2</sup> Phil Wong,<sup>2</sup> Peter Ghali,<sup>2</sup> Peter Metrakos.<sup>3</sup> <sup>1</sup>Department of Surgery, Multi-Organ Transplant Program, McGill University, Montreal, QC, Canada; <sup>2</sup>Department of Medicine, Multi-Organ Transplant Program, McGill University, Montreal, QC, Canada. **Introduction:** Patient with HCC selection criteria for liver transplantation (Milan, UCSF, Barcelona) are under constant re-evaluation.

**Purpose:** To identify preoperative parameters that would construct a prediction nomogram with adjustable 5-year patient survival target for the selection of liver transplant recipients with HCC.

**Methods:** 110 primary adult liver transplants were performed between 1990 and 2006 for HCC. Multi-organ recipients (n=1) and patients that died during the first three postoperative months (n=12) were excluded from the study population. A total of 97 patients were analyzed. Patients outside Milan classification as calculated by pretransplant imaging (n=24) received down-staging chemo-embolization.

**Results:** Actuarial 10-year patient survival was 40%. Mean preoperative AFP level, diameter of the biggest tumor and cumulative size of all identified tumors were identified to be significant predictors of patient survival by univariate analysis.

Parameter	Prediction of Patient Survival / Univariate Models	
	Mean	Significance
Preoperative AFP	200	0.029
AFP trend	Binary	0.078
Number of tumors	1.84	0.024
Diameter of the biggest tumor	4.59	0.007
Cumulative tumor size	6.35	0.008

The same parameters were significant predictors of patient survival in a multivariate model (p = .020).

**Conclusions:** 5-year patient survival nomograms could be constructed based on the mean preoperative AFP, on the diameter of the biggest tumor and the cumulative tumor size, as determined by imaging.

## Abstract# 1092

## Poster Board #-Session: P228-II

**Selected Tumors outside Milan Criteria Achieve Equivalent Outcomes Regardless of Transplant Type.** J. L. G. Moss, A. Siegel, E. Lim, V. Khangar, L. Ferrante, J. Yu, S. Scudato, D. Lapointe-Rudow, R. Renz, J. Emond, R. S. Brown, J. Medicine, New York Presbyterian Hospital, Columbia University Medical Center, New York, NY; Surgery, New York Presbyterian Hospital, Columbia University Medical Center, New York, NY.

**Introduction:** Hepatocellular carcinoma (HCC) is an increasingly common indication for liver transplantation (LT). The Milan criteria are being challenged, and extended criteria donors (ECD) are being used in greater numbers. We retrospectively reviewed outcomes for HCC patients within and outside Milan criteria prior to LT. **Methods:** Between 2002 and 2006, 143 patients were transplanted for HCC. 21 patients were excluded due to previous hepatic resections, second transplants, or no evidence of HCC on explant. We analyzed radiologic pre-operative staging (T2-Milan, T3-4-outside Milan), sex, ethnicity, age, liver disease etiology, maximum AFP, chemoembolization, and type of transplant (living, standard or ECD deceased donor). We calculated disease-free and overall 1- and 3-yr survival through 11/1/07 by the Kaplan Meier (KM) method. Results: Of 122 subjects, 72% met Milan criteria and 28% did not. Underlying liver disease was Hepatitis C in 60%, hepatitis B 19%, alcohol 7%. Patients with hepatitis B trended toward better overall survival. The median AFP was 28.6, and 85% had chemoembolization pre-transplant. Patients with AFP>250 did have significantly reduced disease-free and overall survival, compared to those with AFP<250. 93% underwent deceased donor transplants, and 7% living donor liver transplants (LDLT). These groups had similar recurrence rates and survival curves. Patients outside Milan criteria were more likely to undergo LDLT, than those within criteria (p=0.024). 60% of transplants used ECD livers and 40% did not. The use of ECD livers was similar for patients within and outside