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**THE EFFECT OF INSULIN DEPENDENT DIABETES MELLITUS (IDDM AND NON-INSULIN DEPENDENT DM (NIDDM) ON THE OUTCOME OF LIVER TRANSPLANTATION.** Hwan Y Yoo, Paul J Thuluvath, The Johns Hopkins University Hospital, Baltimore, MD

Background: It is not known whether there was a difference in outcome between insulin dependent DM (IDDM) and non-insulin dependent DM (NIDDM) after liver transplantation. Methods: The outcome of liver transplantation in adult patients with IDDM (N=1,629) and NIDDM (N=1,618) was compared to those without DM (non-DM, N=17,974) using the United Network for Organ Sharing (UNOS) database from 1994 to 2001 after excluding patients who had living donor, multiple organs or re-transplantation, and those with incomplete data. Results: Cryptogenic cirrhosis, hypertension and coronary artery disease (CAD) were 2-3 times more common in IDDM and NIDDM compared to non-DM. 5-year patient and graft survivals by Kaplan-Meier analysis were significantly lower for IDDM ($p < 0.0001$) compared to NIDDM or non-DM; only patient survival was lower for NIDDM ($p=0.04$). Cox regression survival analysis, after adjusting for confounding variables, showed a lower 1-year, 2-year and 5-year patient and graft survival in patients with IDDM compared to non-DM; however, NIDDM was not an independent predictor of survival. Preexisting CAD, and not hypertension, was also an independent predictor of poor 5-year survival. Patients who had both DM and CAD had a lower survival compared to those with either DM or CAD. Conclusion: IDDM and CAD are both independent predictors of poor outcome after liver transplantation. Liver transplant recipients with IDDM or CAD have approximately 40% lower 5-year survival compared to patients without DM or CAD.

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**ROLE OF PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY IN THE TREATMENT OF HEPATIC ARTERY STENOSIS AFTER LIVER TRANSPLANTATION.** Aaron Rabinovich, Henry Ford Hospital, Huntington Woods, MI; Marwan S Abouljoud, Atsushi Yoshida, Iman E Bajjoka, Fadi Dagher, Henry Ford Hospital, Detroit, MI

Hepatic artery stenosis (HAS) after liver transplant is associated with a high incidence of morbidity and mortality. Early identification and reconstruction is the main stay for allograft salvage. Percutaneous transluminal angioplasty (PTA) is an alternative to surgery but its role in treatment of early stenosis and long-term patency remains to be defined. In this report we describe our experience with PTA in the management of HAS. Two hundred seventy eight adult liver transplant patients were retrospectively reviewed for HAS from 1996-2002 at a single tertiary urban liver transplant center. Three time periods were defined based on probable etiology for stenosis. Perioperative stenosis, (group 1), is defined as stenosis occurring in 14 days or less from liver transplantation. Early stenosis, (group 2), is defined as stenosis occurring between 14 and 90 days after liver transplantation. Late stenosis, (group 3), is defined greater than 90 days from liver transplantation. Doppler ultrasound was used to assess the adequacy of the arterial inflow. Twenty-five liver transplant patients, (8.9%), were found to have HAS. All 25 patients presented with unexplained allograft dysfunction at a median time of 33 days (range: 2-200 days). Eight (32%) patients were female and 17(68%) were male. The average age was 49.2+9.1 years. Seventeen (68%) were Caucasian and 8 (32%) were African American. Group 1 had 8 patients (32%) with HAS on the 4+3.9 postoperative day. All 8 were managed surgically. One developed a hepatic artery thrombosis on postoperative day 18. Group 2 had 14 patients (56%) with a diagnosis of HAS on the 45+18.9 postoperative day. Four had mild stenosis ( MiS,<30%), 5 had moderate stenosis ( MoS, 30-60%) and 5 had severe stenosis ( SS, >60%). MiS patients were observed expectantly. Three of the MoS and 2 of the SS patients were managed operatively. Two of the MoS and 3 of the SS patients were managed with PTA. 1 MoS and 2 SS patients had stenting with the PTA. One of the SS patients that underwent PTA had an arterial dissection that was salvaged surgically. A SS patient with PTA and stenting had hepatic artery thrombosis within three months. Group 3 had 3 patients (12%) who presented with HAS on the 185+32.8 postoperative day. 2 patients had MoS and one had SS. Two of the patients where managed with PTA and 1 required surgical intervention secondarily to concurrent biliary stenosis. The SS patient had hepatic artery dissection during the PTA, which was controlled with a stent being placed over the dissected artery. Two of the 7 patients (29%) managed with PTA had arterial dissections. 7/8 patients in group 1, 13/14 patients in group 2 and 3/3 patients in-group 3 had good hepatic arterial flow signals 3 months after surgical repair. Perioperative HAS is primarily technical in nature and is better managed surgically. PTA is an option in mild to moderate stenosis after the perioperative period. In severe stenosis PTA carries a risk of dissection and should be combined with stenting if chosen in lieu of surgical repair. HAS management with the combined approach has been successful in achieving good graft salvage.

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**HOW TO IMPROVE ALLOCATION CRITERIA: EXPERIENCE OF THE BELGIAN LIVER TRANSPLANT WAITING LIST.** Jacques Pirenne, KULeuven, Leuven, Belgium; Bernard de Hemptinne, UZ Ghent, Ghent, Belgium; Jan Lerut, UC Louvain, Brussels, Belgium; Olivier Detry, ULiège, Liège, Belgium; Vincent Donckier, ULB, Brussels, Belgium; Dirk Ysebaert, UZ Antwerpen, Antwerpen, Belgium; Marc Nsampolu, Pierre Thiry, ULB, Brussels, Belgium; Michael Adler, Erasme Hospital, Brussels, Belgium

Facing the increase of organ shortage and liver waiting list mortality, the Belgian Liver Intestine Committee (BLIC) analysed with transparency, thanks to internet technology, the liver transplant waiting list in order to improve the allocation process. In Eurotransplant, liver allocation system is patient-oriented based on medical urgency criteria (MUC), waiting time and regional factor. From 01-10-1999 till 14-04-02, 526 adult patients with chronic liver diseases were listed for liver transplantation (LTX) in the 6 Belgian centers (157 in KU Leuven, 118 in UZ Ghent, 92 in UC Louvain, 85 in U Liège, 65 in ULB and 9 in UZ Antwerpen). Demographic characteristics of the patients were: mean age (± SEM) 52.6 (± 11); 68% female; hepatocellular cirrhosis: 418 (80%) with an alcoholic etiology in 35%, HCV in 22%, HBV/HDV in 7%; cholestatic cirrhosis: 71 (13%) with PBC in 30, PSC in 24. Associated hepatocellular carcinoma (HCC) was present in 25%. Percentage of MUC2 (C-Pugh C), MUC3 and MUC4 (C-Pugh B) at the time of listing was 34%, 32% and 34%. Three hundred forty five patients had LTX, 111 were still listed, 41 died while waiting and 20 were delisted because of development of contra-indications to LTX. Analysis of survival curves (Kaplan Meier) at 90 and 180 days, patients being censored at the time of LTX, delisting or end of follow-up are the following: 99/95/89 and 99/95/79% for the MUC (2/3/4), 98/94/76 and 98/85/59% for the MELD (0-9/10-19/>19), $p < 0.001$. Survival at 90 and 180 days of patients listed MUC2 (n=179) vs MELD > 19 (n=28) is 89 and 79 vs 76 and 60% (log rank 1.26, p=0.2). Even, when excluding patients with HCC (n=126), the MELD > 19 predictive model was not statistically superior than MUC2. Mortality after LTX was 12% vs 9% (p 0.5) in patients with MELD > 19 vs MELD ≤ 19. Conclusion: our study does not suggest that the actual Eurotransplant allocation system based on higher priority given for MUC2 patients should be changed in favour of the MELD score. The predictive power of MELD score should be reevaluated de-emphasizing the impact of regional factor.

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**RETURN OF GRAFT FUNCTION IN DONORS AFTER ADULT LIVING DONOR LIVER TRANSPLANTATION.** Mark W Russo, New York-Presbyterian Hospital, New York, NY; Alex Teixeira, NY Hosp Queens, New York, NY; Dianne LaPointe-Rudow, James Guerrera, Paul Gaglio, Robert S Brown Jr, Jean Emond, NYPH, New York, NY; Milan Kinkhabwala, New York-Presbyterian Hospital, New York, NY

**Background**: Adult living donor liver transplantation (ALDT) is increasingly used due to the cadaveric organ shortage. The safety of donors is paramount. Return of graft function in donors is important and may be useful in determining if complications have developed **Aim**: To assess return of graft function as measured by liver enzymes and coagulation. **Methods**: We reviewed the past 50 consecutive adult living donors performed at our Center. All subjects donated the right hepatic lobe. Liver enzymes and INR were collected preoperatively and post-op days 1, 3, 5, 7, 14. Means and standard deviations were calculated for each day. **Results**: The mean age of our study group was 42. The Figure shows that peak total bilirubin occurred on post-op day 3, while peak INR and ALT occurred on post-op day 1. On post-op day 3, 11 (22%) patients had a bilirubin above 2 mg/dl. By day 14 all but one patient had a bilirubin less than 2 mg/dl. 40 (80%) of patients had a normal AST (<50 IU/L) by day 14, but only 60% had a normal ALT at day 14. 46 (92%) of donors had an INR less than 2.0 on post-op day 3. There were no donor deaths. Complications occurred in 22% of donors and included: bile leak (1), hernia (3), pleural effusion (1), pneumonia (1), urinary tract infection (1), fluid collection (1), wound infection (1), ascites (1), and right eye blood vessel clot (1). The total bilirubin at day 5 in the donors with ascites and bile leak was 3.1 and 5.3 mg/dl, respectively compared to 2.0 mg/dl for donors without complications. **Conclusions**: In healthy donors of the right hepatic lobe recovery of graft function as measured by total bilirubin begins after post-op day 3. A rising bilirubin beyond post-operative day 3 warrants investigation. Synthetic compromise is negligible and peaks at day 1, with a return to normal by day 3 in most patients. ALT elevation may be prolonged even 2 weeks post-operatively, and may not by itself, need further investigation.