

Concurrent Oral Sessions: Liver

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Abstract# 1499

Prediction of Significant Findings On Screening Colonoscopy During Liver Transplant Evaluation. B. Bhatt, T. Lukose, R. Brown, E. Verna. *Abdominal Organ Transplantation-Department of Surgery, Columbia University, New York, NY.*

Purpose: Screening colonoscopy is a standard part of the liver transplant (LT) evaluation process. We aimed to evaluate the yield of screening colonoscopy and identify predictors of neoplastic findings.

Methods: We retrospectively assessed all patients who completed LT evaluation at our center between 1/08-12/12. Patients < 50 years old, without records of screening colonoscopy, with a family history of colon cancer, BRCA mutation or inflammatory bowel disease were excluded.

Results: 782 patients were evaluated for LT in the study period, 603 met inclusion criteria and were analyzed. The overall mean age was 60 years, 68% were male, 53% Caucasian, 20% Hispanic and 6% African American. A total of 447 polyps were found in 262 (43%) patients. 135 (22%) had adenomatous polyps, 84 (14%) hyperplastic polyps and 6 (1%) inflammatory polyps. 8 (1.3%) had adenomas with dysplasia and no invasive neoplasms were discovered. Additional findings included hemorrhoids or rectal varices (63%), diverticulosis (29%), and vascular ectasias (3%). Baseline characteristics including gender, race/ethnicity, BMI, obesity, HCV and PSC status, baseline hemoglobin and lab values, MELD, CTP class, tobacco use, portal hypertension and comorbidities were similar between those with and without polyps. Those with polyps had a higher mean age (60 v. 59, $p=0.04$), were more likely to have NAFLD (13% v. 8%, $p=0.02$) or a history of significant alcohol use (39% v. 28%, $p=0.007$), and had a trend towards being more likely to have diabetes mellitus (37% v. 30%, $p=0.07$). In the final multivariable model, age (OR 1.33 per decade, $p=0.048$), significant alcohol use (OR 1.81, $p=0.001$) and NAFLD (OR 2.05, $p=0.01$) were predictive of a polyp on colonoscopy. Patients with adenomatous polyps were less likely to be CTP class C (19% v. 29%, $p=0.01$) and more likely to have significant alcohol history (40% v. 31%, $p=0.05$). In the final model including age (OR 1.31 per decade, $p=0.11$), significant alcohol use (OR 1.59, $p=0.03$) and CTP class C (OR 0.54, $p=0.01$) were predictive of adenoma.

Conclusions: Screening colonoscopy in patients awaiting LT yields a high rate of polyp (43%) and adenoma (22%) detection, perhaps preventing the accelerated progression to carcinoma that can occur in immunosuppressed post-LT patients. Alcohol use, NAFLD, and less advanced liver disease, in addition to standard predictors such as advanced age, may identify patients at the highest risk.

Abstract# 1500

Liver Transplantation for Nonalcoholic Steatohepatitis. Organ Waste or Successful Treatment of the New Epidemic? A Single Center Experience. B. Kern,¹ R. Sucher,¹ J. Fritz,² B. Feurstein,¹ C. Fabritius,¹ C. Boesmueller,¹ R. Oellinger,¹ J. Pratschke,¹ S. Schneeberger.^{1,4} *Visceral-, Transplant-, Thoracic Surgery, Medical University, Innsbruck, Austria;* ²*Statistics and Informatics, Medical University, Innsbruck, Austria.*

Background:

Nonalcoholic steatohepatitis (NASH) may become the leading indication for orthotopic liver transplantation (OLT). The aim of this study was to describe the clinical outcome of NASH patients compared to patients with other common indications for OLT.

Methods:

This is a retrospective analysis of 515 patients who underwent deceased-donor OLT between 2002 and 2012.

Results:

The incidence of NASH was 14.4% (74/515). Study population included 116 (22.5%) women and 399 (77.5%) men. NASH cohort compared to the nonNASH cohort showed no significance on patient survival ($p=0.109$). Patients with a malignancy displayed a shorter overall survival ($p=0.009$). Average MELD score was 21.0, average BMI 25.3. Patients with a lower MELD at time of transplantation were associated with a significantly better overall survival ($p=0.043$). BMI greater than 30kg/m² had no impact on survival rates. Diabetes was diagnosed in 124 patients, compared to the patients with no evidence of diabetes overall survival was significantly shorter ($p=0.006$). NASH patients with diabetes had similar overall survival and complications when compared to NASH patients without diabetes ($p=0.242$; $p=0.112$ respectively). Donor data such as BMI over 30 kg/m², severe steatosis, age over 55 years and cold ischemic time over 14 hours had no impact on patient survival. Infection rate was significantly higher in the NASH cohort ($p=0.04$). NASH patients with HCC were associated with a significantly shorter overall survival compared to HCC patients with no evidence of NASH ($p=0.02$; see figure 1).

Conclusion:

Metabolic comorbidities such as diabetes significantly impact on patient survival. NASH predicts an inferior outcome in patients with HCC compared to other liver diseases. Accurate preoperative treatment of metabolic disorders and intensified infection prophylaxis should be considered in patients with NASH undergoing OLT. Criteria for OLT in patients with HCC and NASH should be revisited.

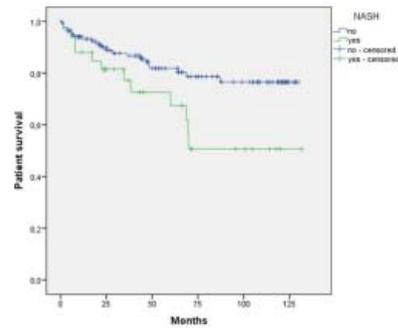


Figure 1: Patient survival in HCC patients: NASH vs. no-NASH

Abstract# 1501

The Negative Predictive Value of Preoperative Stress Testing for Non-Fatal Cardiac Events After Orthotopic Liver Transplantation in the Modern Era. F. Niyazi, R. Patel, Y. Nasr, J. Perez, S. Mawri, M. Njeim, A. Yoshida, D. Moonka, S. Jafri, J. Schairer, K. Abdul-Nour. *Internal Medicine, Henry Ford Health System, Detroit, MI.*

Aim: Studies evaluating functional stress testing as the means of preoperative cardiac clearance in patients awaiting orthotopic liver transplantation (OLT) have shown significant variability in the prediction of major adverse cardiovascular events (MACE). Given increased co-morbid cardiac risk factors in our current era of transplant we evaluated the negative predictive value (NPV) of stress echocardiography (SE) for post-OLT survival and MACE in the modern era.

Methods: We performed a retrospective review on 384 consecutive patients who received an OLT between 2007 and 2011. Data was collected on demographic characteristics, pertinent pre-operative laboratory results, echocardiographic studies and post-operative events. Mortality was confirmed by public documents available via the Social Security Death Index. MACE was defined as a combined outcome of cardiac death, new onset congestive heart failure, nonfatal myocardial infarction, stroke or need for coronary revascularization. The NPV of SE for cardiac mortality and MACE were calculated using the subgroup of patients that achieved an adequate level of cardiac stress while undergoing testing. A SE was considered abnormal if there were wall motion abnormalities or drop in ejection fraction greater than 5%. **Results:** 384 consecutive patients received an OLT between January 2007 and November 2011. Over a 3 year post-operative follow-up period there were 82 total deaths, 17 cardiac deaths, 12 nonfatal myocardial infarctions, 15 new onset heart failure and 5 coronary revascularizations. 276 (72%) patients were evaluated by SE. Within the stress testing cohort of patients, 189 (68%) reached target heart rate for optimal stress testing. Hypertension (34%) and diabetes mellitus (25%) were prevalent in this group. A normal SE had a 98.4% NPV for cardiac mortality at 3 years of postoperative follow-up and a 92.51% NPV for MACE. Survival rate at 3 years postoperatively was 78.6%.

Conclusion: The overall survival rate of liver transplant patients in our highly morbid recent liver transplant population is comparable to the national survival rates. The unadjusted NPV of SE was very strong for prediction of cardiac events. Well-thought evidence based strategies that incorporate other clinical predictors in the modern transplant population are still needed.

Abstract# 1502

Post Liver Transplant Biliary Complications in Deceased Donor Liver Grafts: Analysis of Preservation Solution. R. Mangus, R. Chihara, T. Borup, A. Marshall, J. Fridell, C. Kubal, A. Tector. *Transplant Division, Department of Surgery, Indiana University School of Medicine, Indianapolis, IN.*

Objective: Histidine-tryptophan-ketoglutarate (HTK) and University of Wisconsin (UW) preservation solutions are the two solutions used primarily in abdominal organ procurement in the U.S. Bile duct complications are common in the post liver transplant (LT) period and may be related to the arterial blood supply for the biliary system. Because HTK is much less viscous than UW, it has been hypothesized that this solution provides a better flush of the biliary microcirculation. Improved blood clearance from these small vessels may lower the risk for thrombus formation and improve post-transplant biliary perfusion leading to a lower risk of biliary complications. This study reviews the biliary complications in a large number of deceased donor LTs and compares outcomes for HTK and UW.

Methods: Data were extracted using a retrospective review of all liver transplants between 2001 and 2013, with an extensive review of all endoscopic and percutaneous biliary imaging and post-transplant liver function enzymes. Our center uses doppler ultrasound and biliary imaging as first evaluation for elevated liver enzymes, prior to biopsy, resulting in a large number of imaging studies. Primary outcomes included need for imaging, any leak, and stricture formation.