Methods: Data from 2605 children listed for liver transplant in the Studies in Pediatric Liver Transplantation (SPLIT) Registry between 1996 and 2006 was studied. Patient and graft survival were compared amongst the types of hepatic malignancies, and with non-tumor outcomes, and risk factors for poor outcome for each tumor type such as timing of transplant from listing, donor type, age, gender, and era of transplant were evaluated.

Results: A total of 176 children had hepatic malignancies, including hepatoblastoma (HB, n=124), hepatocellular carcinoma (HCC, n=21), hemangioendothelioma (HE, n=18), and 'other' tumor (n=13; undifferentiated embryonal sarcoma (UES, n=5/13). Recipient age and gender were not statistically significant in terms of outcomes. All deaths on the waiting list (HB, n=3, HCC, n=2, HE, n=3) occurred prior to 2002. Five year patient and graft survival rates from transplant were lower compared to non-tumor patients (71% patient, 66% graft vs. 87% and 79%, p<0. 01), mainly related to tumor metastases/recurrence**:** of 34 reported patient deaths in all hepatic malignancies, 24 were tumor related (HB, n=20, HCC, n=4). Two of five reported deaths in patients with HE were related to severe cardiomyopathy. Five year survival rates were improved in patients who received live donor transplants when compared to deceased donor transplants (84% patient, 76% graft vs. 68% and 64%, p<0. 001). Five year patient and graft survival in the 'other' tumor type category were better (100%, 92%, respectively) when compared to HB (69%, 64%), HCC (63%, 63%), and HE (65%, 65%) tumor types.

Discussion: Long term survival after liver transplantation for unresectable hepatic malignancies in children compares favorably with reported survival after primary resection. Timing of transplant may play a role in outcome**:** all waiting list deaths occurred prior to use of the current UNOS PELD scoring system; the improved outcomes in those receiving living donor transplants may also reflect on the ability to time transplantation more effectively. However, the majority of patient deaths after transplant were due to recurrence, particularly in HB, where close attention to resectability vs. transplantation at diagnosis, and effects of adjunctive chemotherapy, while beyond the scope of this analysis, deserves detailed further study. In HE, the focus should be on preventing cardiac mortality. Outcomes for 'other' rare tumors such as UES were uniformly good, suggesting that primary liver transplant may be the preferred modality for surgery for these multicentric hepatic malignancies.

499 DOES LIVING DONATION OFFER AN ADVANTAGE IN SURVIVAL AFTER PEDIATRIC LIVER TRANSPLANTATION IN THE MELD ERA? – ANALYSIS OF OPTN/UNOS DATA

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Background: Recent studies demonstrated better outcomes of graft and patient survival in living donor liver transplantation (LDLT) compared with those of whole liver (WLT) and split liver transplantation (SLT). However their results often utilize recipients from both pre and post model-for-end-stage- liver-disease (MELD/PELD) implementation.

Aims**:** This study retrospectively compares LDLT, SLT, and WLT in pediatrics in the MELD/PELD era by examining the OPTN/UNOS database with the intent to identify recipient factors that may impact outcomes.

Materials and Methods: From January 1, 2002 to December 31, 2006, 1, 976 liver transplant (LT) in recipients age<12 years old were reported to the OPTN/UNOS. Of these, 298 LDLTs, 384 SLTs, and 1, 294 WLTs were identified. Multiple organ transplants were excluded from the study. The log-rank test was used for comparison of the two survival curves.

Results: Unadjusted graft survival rates of LDLT (85% at 1-yr and 82% 3-yr) were not significantly different to those of SLT (81% at 1-yr and 75% 3-yr, P=0. 11) and WLT (81% at 1-yr and 75% 3-yr, P=0. 08) (Figure). Patient survival rates of LDLT (91% at 1-yr and 90% 3-yr) were also not significantly different to those of SLT (90% at 1-yr and 86% 3-yr, P=0. 54) and WLT (88% at 1-yr and 84% 3-yr, P=0. 12) (figure). Incidence of primary graft failure was 3. 4% for LDLT compared with 3. 9% for SLT (P=0. 70) and 3. 5% WLT (P=0. 91). Incidence of graft loss due to vascular thrombosis in LDLT group (6. 0%) also was not significantly different than those of SLT (6. 0%, P=0. 98) and WLT group (5. 1%, P=0. 91). Incidence of biliary tract complications was the highest in SLT (2. 1%) among 3 group, but the differences were not statististically significant (0. 7% in LDLT, P=0. 13 and 0. 7% WLT, P=0. 96). In multivariate analyses, both adjusted graft and patient survival rates of LDLT were not significantly different than those of SLT (Relative Risk (RR)=0. 79 (95% CI**:** 0. 59-1. 07), P=0. 13 for graft and RR=0. 77 (0. 52-1. 14), P=0. 19 patient) and WLT group (RR=0. 92 (0. 71-1. 18), P=0. 50 for graft and RR=0. 75 (0. 53-1. 06), P=0. 10 patient) after adjusting for confounding factors such as PELD and regraft.

Conclusion: In the MELD era, both SLT and WLT in pediatrics yielded comparable graft and patient survival to LDLT.

500 OUTCOME OF NON-HEART BEATING DONOR (NHBD) LIVERS IN PAEDIATRIC RECIPIENTS.

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Adult liver transplantation using grafts from non-heart beating donors (NHBD) is associated with acceptable short and long-term graft survival. Little is known about the outcome of paediatric recipients transplanted with livers from NHBD. From April 2001, 158 livers were retrieved from NHBD using our previously described rapid retrieval technique. Eighty-four were transplanted, of which 11 were paediatric recipients. Donor characteristics of the organs transplanted into the paediatric recipients included a mean age 25. 5 years (10-64), intensive care stay of 10. 2 days (1-14) serum bilirubin level of 25 (7-86) and inotropic support in 4 of 11. The mean warm and cold ischaemic time was 17 (11-29) minutes and 7. 6 (6. 2-12) hours, respectively. Indications for transplantation included**:** various chronic liver diseases in 9, acute liver failure (ALF) in one and re-transplantation for hepatic artery thrombosis in one. The mean recipient age was 6. 4 years (8-156 months) with a median Child-Pugh score of 9 (7-13). Liver grafts were transplanted as whole organs (n=3), reduced grafts (n=6), formal split (n=1) or an auxiliary (n=1). When a NHBD graft was reduced the remaining liver was used for isolation and transplantation of hepatocytes for children with metabolic diseases. Six of the 11 grafts were reperfused with arterial blood and all had biliary reconstruction by Roux-en-Y hepatico-jejunostomy. The mean post-operative follow-up was 32. 3 months (7-67. 4) months. Five of 11 developed biopsy proven acute rejection of which 2 had two episodes. The mean AST (mmol/L) at day 1, 3 months and 12 months was 2820 (8471-489), 58. 5 (20-174) and 50. 6 (27-119). Two patients developed cut surface collections that required percutaneous drainage. One patient developed ductopenic rejection 18 months post-transplant and is being considered for retransplantation. To date there have been no biliary complications and the mean bilirubin (mmol/L) at day 7, 6 months and 12 months was 63. 2 (12-226), 9. 9 (4-31) and 10. 7 (6-20). In summary, LT with NHBD grafts in paediatric recipients can be performed with low morbidity and excellent patient outcome.

501 EFFICACY AND SAFETY OF CYTOMEGALOVIRUS PP65 ANTIGENEMIA-GUIDED PREEMPTIVE THERAPY IN PEDIATRIC LIVER TRANSPLANT RECIPIENTS

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Background: Cytomegalovirus (CMV) infection is a significant cause of morbidity and mortality in liver trasplantation. Ganciclovir is considered the mainstay treatment for CMV infection; however, there is still controversy on the optimal prophylactic strategy for CMV disease after transplantation (universal prophylaxis vs preemptive therapy). In preemptive therapy ganciclovir is started and given for a limited time, based on evidence of viral replication using CMV-pp65 antigenemia or CMV-PCR. Preemptive approach limits the cost of therapy and reduces the adverse effects related to ganciclovir and drug resistance. The aim of this study was to analyze our experience on CMV disease in pediatric liver transplantation and to assess the efficacy and safety of CMV antigenemia-guided preemptive therapy. Incidence of disease among different risk groups, survival, adherence to treatment and drug therapy costs were also analyzed.

Methods: Single center, retrospective review of pediatric liver transplant recipients during a 9-year period. Only patients that survived a minimum of 3 months after transplant and had an adequate CMV-antigenemia follow-up were included. Patients receiving antiviral therapy for reasons other than CMV infection were excluded. Demographics, risk for CMV disease, antigenemia results, and relevant clinical data were analyzed. Descriptive statistical analysis included Student's t test and Pearson correlation test for continuous variables,