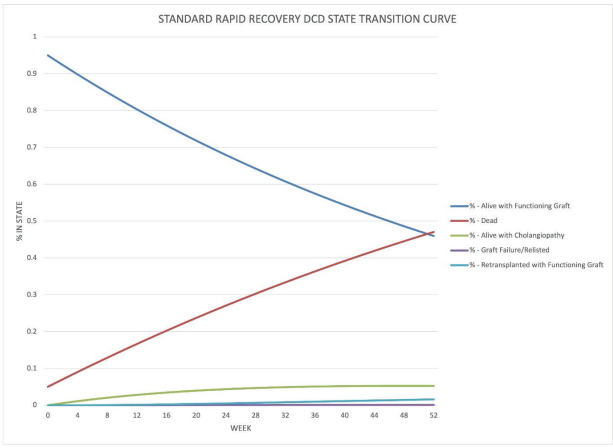

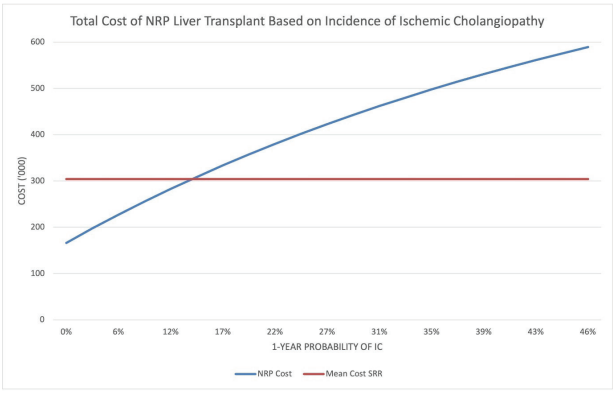

DISCLOSURES: M. Di Napoli: None. **M. Baimas-George:** None. **S. Bakhtiyar:** None. **T. Nydam:** None. **R. Choudhury:** None.

Abstract #: P11

Comparative Analysis of Liver Transplants from Donation After Circulatory Death Using Abdominal Normothermic Regional Perfusion versus Rapid Recovery: A Single Center Experience Sergio Duarte, Siya Bhutani, Tran Ngo, Rishiraj Ganguli, Rushi Shah, Georgios Vrakas, Ashraf El-Hinnawi, Daiki Soma, Ali Zarrinpar, Werviston De Faria, Thiago Beduschi.*University of Florida, Gainesville, FL.*

The warm ischemic period associated with donation after circulatory death (DCD) limits graft utilization. To expand DCD liver graft use, abdominal normothermic regional perfusion (A-NRP) of the deceased donor has been adopted to facilitate graft recovery prior to explantation. This study performs a comparative assessment between standard rapid recovery (RR) and the novel A-NRP procurement strategies at our center. **Methods:** We reviewed a cohort of DCD liver transplants at the University of Florida Abdominal Transplant Center from April 2020 to July 2024. Analysis compared donor characteristics and recipient outcomes after liver or simultaneous liver-kidney transplantation. Primary outcomes assessed were 90-day graft and recipient survival. Secondary outcomes were post-transplant biliary complications, ICU and hospital length of stay, POD1 to POD7 peak liver function tests, and hospital readmissions in the first 90 days. **Results:** 58 liver or liver-kidney transplants from DCD donors were performed over this period and included in this analysis. 38 were procured using standard RR; 20 were procured after A-NRP. A-NRP donors had significantly higher BMIs ($p<0.035$), longer warm ischemia times (from agonal phase, i.e., SpO2<80%, to initiation of NRP or cold flush) and higher KDPIs ($p<0.0001$) than RR donors. A-NRP donors also trended towards being older ($p<0.092$). All recipients and grafts survived longer than 90 days post-transplant. There were no differences in post-transplant peak liver function tests between both groups in the first 7 days, albeit peak alkaline phosphatase trended lower in A-NRP recipients ($p<0.06$). The groups had comparable ICU and inpatient length of stay as well as a comparable number of readmissions in the first 30 days post-transplant. Finally, only 2 (10%) A-NRP recipients had ERCP confirmed biliary complications in the first 30 days post-transplant compared to 8 (21%) RR recipients ($p<0.46$). **Conclusions:** We show that the implementation of A-NRP in DCD donors has facilitated the use of liver grafts from higher risk donors without compromising recipient outcomes. A-NRP has potential to increase the number of organs available and transplanted from DCD donors.
DISCLOSURES: S. Duarte: None. **S. Bhutani:** None. **T. Ngo:** None. **R. Ganguli:** None. **R. Shah:** None. **G. Vrakas:** None. **A. El-Hinnawi:** None. **D. Soma:** None. **A. Zarrinpar:** None. **W. De Faria:** None. **T. Beduschi:** None.

Abstract #: P13

Outcomes of Multi-Organ Donation Recipients Following Prioritized Facial Vascular Composite Allograft Procurement Bruce Gelb[2], Ren-Wen Huang[2], Daniel Ceradini[1], Eduardo Rodriguez[2].*[1]Hansjörg Wyss Department of Plastic Surgery, New York, NY; [2]NYU Langone Health, New York, NY.*

Background: Facial transplantation offers transformative solutions for patients with severe facial disfigurements due to trauma and burns. Ischemia time limits for the facial allograft are not well understood, and graft dysfunction or graft failure carries devastating risks. The recovery of the facial allograft during the deceased donor procedure is generally prioritized in the sequence of organ recovery to ensure tissue and muscle viability and optimize functional outcomes. No prior studies have evaluated whether this face-prioritizing strategy negatively impacts transplant outcomes from other organs recovered from vascularized composite allotransplantation (VCA) donors. This study evaluates the impact of prioritizing facial allograft procurement on the outcomes of other organ transplantation surgeries.
Methods: Retrospective analysis of four VCA donor recoveries and face transplants performed NYU Langone Health, examining perioperative parameters and the outcomes of other organs transplanted from the same donors. Data including operative times, intraoperative BP measurements, oxygenation, urine output and blood product administration were recorded. Donor-related data was verified using the United Network for Organ Sharing database, donor operative records at our institution, and data from LiveOnNY and Gift of Life Organ Procurement Organizations for de-identified recipient and graft survival.
Results: Prioritizing face allograft procurement does not compromise the viability of other transplanted organs. 15 organs were transplanted into 12 patients. 1-year patient survival was observed in 11 out of 12 non-VCA organ recipients (92%). One patient died during the transplant surgery. Two patients died greater than 3 years from transplant due to etiologies other than primary organ dysfunction. 2 graft failures occurred in the first postoperative year (87% graft survival). Comprehensive pre-operative planning including cadaveric rehearsals, computerized surgical plans, and utilization of 3D printed cutting guides contributed to stable perioperative parameters, minimization of intraoperative blood loss, and helped assure an optimized team dynamic and efficiency.
Conclusion: This study supports the safety and feasibility of prioritizing facial vascular composite allograft procurement without adversely impacting the success of non-VCA organ transplants. Our approach, emphasizing meticulous planning and advanced surgical techniques, provides a replicable model for other centers.
DISCLOSURES: B. Gelb: None. **R. Huang:** None. **D.J. Ceradini:** None. **E.D. Rodriguez:** None.

Abstract #: P14

Development and Validation of a Pediatric Donor Liver Risk Score (PeDLRS) to Predict 1-Year Graft Loss or Mortality in Pediatric Liver Transplant Recipients Stephen Hartman[2], Michela Carter[2], Alexander Bondoc[1], Suzanne Evans[1], Greg Tiao[1], Jonathan Merola[1].*[1]Cincinnati Children's Hospital, Cincinnati, OH; [2]University of Cincinnati, Cincinnati, OH.*

Current transplant risk indices are helpful for risk stratification of adult donors, but their application to pediatrics is limited. We aimed to develop a quantitative pediatric donor risk index for pediatric liver recipients. The UNOS STAR registry was used to identify liver transplants between 6/30/2004-3/3/2023 involving donor and recipient both aged <18 years with 1-year follow-up. Candidate predictors for a composite outcome of death or graft loss within 1-year of transplant were selected based on measurement on or prior to the transplant date, having <30% missingness, and clinical relevance. Five logistic regression models containing donor and recipient factors were constructed using different estimation procedures and ranked based on F1 score. The best performing model (AUC=0.68) and the associated donor and recipient factors for predicting graft loss and mortality at 1 year is shown in Figure 1A. The marginal effects of the donor factors from the best performing model were calculated to generate a numeric risk score for 1 year graft loss or mortality (Figure 1B). The donor factor that most strongly increases the risk score includes history of hypertension, while donors succumbing to drug intoxication, gunshot wounds, and seizures most strongly lowered the risk score. In an independent cohort, the donor risk score demonstrated strong correlation to 1-year graft loss and mortality (Spearman coefficient=0.9). This validated pediatric donor liver risk score may inform allograft risk for pediatric recipients.