# NEWSLETTER - FALL 2022

## UNOS News

By Flora Simmons, MD

### Policy Changes Improve Access For the Highest Acuity Patients

The data reports on the first two years of the new liver and intestinal allocation policy based on acuity circles. The policy was designed to increase equity consistency in transplant access for the most urgent candidates. Key improvements include significantly increased liver transplants for candidates with MELD scores of 29 or higher as well as those in Status 1A or 1B. Notably, the geographic variability in medical urgency scores at transplant has decreased at the levels of donation service area, state, and region.

### UNOS Organ Tracking Service Is Now Underway

26% of all organ procurement organizations (OPOs) are now utilizing the UNOS organ tracking service to monitor organs in transit. The UNOS Organ Tracking Service is used to track organs from packaging to final delivery to the recipient team. The device pings every two minutes to provide real time updates.

### U.S. Leads The World In Transplants With Its 1 Million Transplant Milestone

The U.S. has reached a historic 1 million organ transplantations. This milestone was made possible due to the expansion of more equitable organ allocation policies, expanding the donor pool, and advancements of organ preservation techniques.

### OPTN: The Latest Data On Organ Donation And Transplants In The U.S.

Find comprehensive reports and metrics at the regional and national level. Learn how the OPTN ensures equity for waitlisted patients.

# Research Updates and Interesting Articles

By Michael Trostler, MD

**Influence of anesthesia type on post-reperfusion syndrome during liver transplantation: a single center retrospective study**

Highlights: South Korean study of 398 patients evaluating incidence of post-reperfusion syndrome in a propofol vs sevoflurane anesthetic, found a statistically significant decrease in the sevoflurane group.

**Outcomes of Bariatric Surgery Before, During, and After Solid Organ Transplantation**

Highlights: Bariatric surgery was able to be performed safely, pre-transplant, simultaneously with transplant, or post-transplant with no increase in adverse events related to the bariatric procedure. Bariatric surgery leads to weight loss and decreased comorbidities in this patient population.

**Orthotopic Transplantation of the Full-length Porcine Intestine After Normothermic Machine Perfusion**

Highlights: The new trend of machine perfusion in organ transplantation is at the forefront of transplantation and extended criteria organs. Porcine model of intestinal transplant has been shown to be viable and successful.

**Safety of Intraoperative Blood Salvage During Liver Transplantation in Patients With Hepatocellular Carcinoma A Systematic Review and Meta-analysis**

Highlights: A review article of 9 studies including 2000 patients shows no increase in disease free survival, HCC recurrence or impaired overall survival. If cell salvage is desired, it should not be immediately disregarded as an option just because of a hepatocellular carcinoma diagnosis.

**Regional and National Trends of Adult Living Donor Liver Transplantation in the United States Over the Last Two Decades**

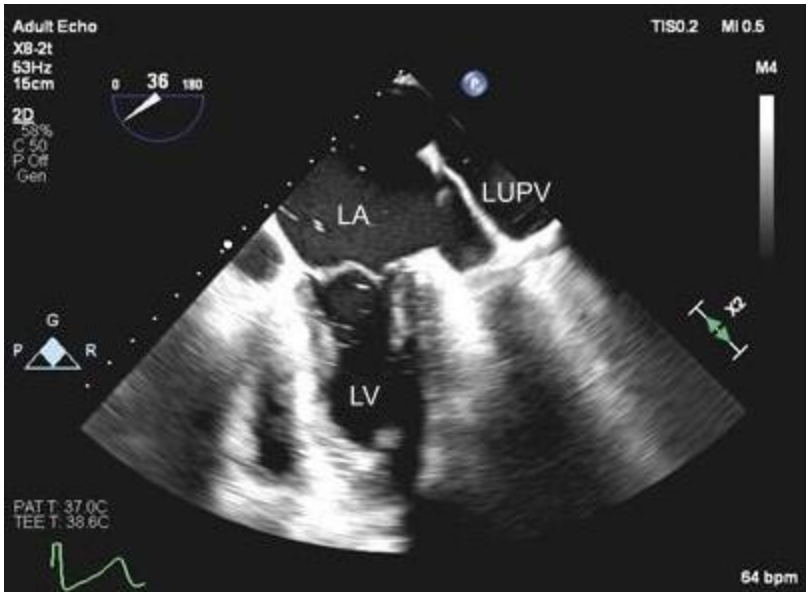
Highlights: After a peak in living donor liver transplants in 2001 there was a fall, but there has been a steady rise from 2011 to 2019. There have been improvements in transplant survival over the years with a significantly decreased mortality over the past few years compared to the first few years.

## Special Topics

By Alex Stoker, MD

### Intrapulmonary shunting and paradoxical air embolism during liver transplantation

Patients with end-stage liver disease often have evidence of intrapulmonary shunting (IPS) due to pulmonary vascular dilation with a prevalence estimated to be between 13 and 47%. IPS may be detected preoperatively with transthoracic echocardiography as air bubbles appearing in the left atrium 5 to 6 cardiac cycles after first appearing in the right atrium. Despite the frequency of intrapulmonary shunting in patients presenting for liver transplantation, cases of severe paradoxical air embolism (PAE) causing hemodynamic collapse are rarely reported in the literature ( Badenoch 2017, Smart 2021). With the increasing use of TEE during liver transplantation, there is opportunity to diagnose PAE by visualizing air passing to the left atrium from the pulmonary veins (see figure below). A PAE has the potential to travel to the coronary arteries or cerebral circulation and should be considered as a possible cause of organ dysfunction or hemodynamic perturbations during liver transplantation.




Mid esophageal view of the left atrium and left ventricle with air bubbles seen emerging from the left upper pulmonary vein. LA, left atrium; LV, left ventricle; LUPV, left upper pulmonary vein.

## In the Spotlight: Saint Louis University Medical Center Transplant Program

By David Rosenfeld, MD

For this quarter's segment, we connected with Dr. Govind Rangrass, MD, Director of Transplant Anesthesia and Director of Quality/Patient Safety at the new 400-bed SSM Health/Saint Louis University Hospital (SLUH).

Saint Louis University has a long history with abdominal transplant, at one time being one of the busiest transplant centers in the country. In recent years, their volumes have hovered between 30-40 liver transplants/year. SLUH recently merged with the SSM Health, a large hospital network, and as its only transplant center, the program is gearing up for an increase in transplant evaluations and referrals and is carefully navigating the listing process for high-risk patients.

As part of the selection process, the transplant anesthesia director sits on the Liver Recipient Selection Committee. A unique aspect of their program is that they have a separate High Risk Cardiac Evaluation Meeting, which meets weekly to discuss candidates with complex cardiac disease who may benefit from additional pre transplant work-up optimization and ensure postoperative continuity of care with the cardiology team. One of their transplant faculty was the corresponding author of the newly released AHA Scientific Statement on Coronary Heart Disease Screening in Kidney and Liver Transplantation Candidates published in *Circulation.* Between 2019-2021, patients undergoing liver transplantation at SSM Health/SLUH had 100% survival at one month and 94% survival at one year post transplant.

Their program is one of the few that uses alternative portal flow in transplant for patients with portal vein thrombosis using reno-portal (connecting left renal vein of recipient to donor portal vein to act as inflow) and gastro-portal (using left gastric vein as inflow) anastomoses. Another unique aspect of the program is the disproportionately high number of hepatitis C positive donor livers utilized (~20%). Their program is gaining more experience with the Transmedic normothermic perfusion pumps, which it intends to continue using in the future.

TEG 6S is routinely used and available and housed in the hospital coagulation lab, with a real time tracing available in the operating room. Venovenous bypass is used selectively for redo liver transplants, patients with portopulmonary hypertension with RV dysfunction or hepatopulmonary syndrome, and high MELD patients on preoperative

CRRT. Heparin (50U/kg) is administered for hypercoagulable patients prior to caval cross-clamping, and antifibrinolytics are administered as a bolus during the anhepatic stage. Octreotide infusions (50mcg bolus followed by 100mcg/hr) are routinely run for patients with significant portal hypertension.

The SSM Health/SLUH transplant program hosts a robust outcomes research center and has multiple grant-funded research projects. Examples include a study on biomarkers of kidney function to predict perioperative acute kidney injury; a normothermic perfusion basic science lab studying pharmacologic tools to reduce ischemia reperfusion injury in discarded human livers placed on perfusion pumps; and a $1.8 million grant in conjunction with Missouri University of Science and Technology to develop artificial intelligence driven decision-making tools for organ allocation.

# Announcements

## The Accessibility and Inclusion Committee

The SATA Council is pleased to announce the introduction of The Accessibility and Inclusion Committee. The Committee will help develop SATA policies by providing the Council with their views on how to ensure members have equal access to all service opportunities within the organization, All SATA members are invited to nominate themselves or a colleague to serve on this new important committee as part of the society leadership. *Please send your nominations to the SATA Secretary: Lorenzo De Marchi at demarchilorenzo@yahoo.com*

- Service: Appointment by SATA Council
- Term: 2 years; can be renewed
- Requirements: SATA Membership in good standing
- Purpose: Oversight and Advocacy Committee

## Seed Grant Funding Mechanism

The SATA Seed Grant is a one-year $5,000 transplant project starter grant, open to junior faculty members and trainee physician members of the Society. The grant aims to inspire and assist aspiring faculty/trainee physicians who have yet to receive any

previous funding to start a transplant-related project. The grant requires the recipient to submit a support letter from the mentoring faculty and the Department Chairperson.

Application/Grant Cycle:

- **November 1, 2022** - Announcement of the grant
- **December 1, 2022** – Opening of the submission site
- **February 28, 2023** - Closure of submission site
- **April 1, 2023** - Announcement of the awardee and send letters of feedback to the other applicants
- **April 17, 2023** - Grant presentation at SATA National Meeting in Denver, CO
- **July 1, 2023** - Grant initiation
- **December 31, 2023** – submission of the mid-term report
- **June 30, 2023** – submission of the final report

Click here to review the SATA Seed Grant Grading

Click here to review the SATA Seed Grant Proposal

## Transplant Anesthesia Upcoming Meetings

SATA Meetings

Southeastern SATA regional Meeting: November 5, 2022

SATA West Meeting, December 10, 2022, San Francisco - in person and hybrid.
Submit an Abstract by email to: Dieter.Adelmann@ucsf.edu

Mid-Western SATA Regional Meeting: January 21, 2023

**Other Meetings:**
The Liver Meeting - aasld.org, November 4-8, 2022, Washington, DC

The 2023 International Congress of ILTS, ELITA and LICAGE
May 3-6, 2023; Rotterdam, Netherlands

American Transplant Congress (ATC) 2023 Annual Meeting
June 3-7, 2023, San Diego, CA