NEWSLETTER - Spring 2023

SATA Annual Meeting, Denver Colorado - Recap

By Natalie Smith, MD

The Annual SATA Meeting was held in conjunction with the International Annual Research Society (IARS) meeting in the mile high city of Denver 2023 on April 17. Members welcomed back the in-person gathering as a chance to mingle with their colleagues. The meeting content fostered lively discussions, new ideas, and collaborations. Expert speakers from anesthesiology, surgery, and hepatology covered topics in the fields of abdominal and thoracic transplantation. Coagulation, pain and analgesia, organ donation and allocation, and perfusion management with angiotensin II and terlipressin were hot topics on the agenda.

Two lectures were given by members of the government organization, the Organ Procurement and Transplant Network on the future of transplantation in the US. Drs. Lorenzo Dimarchi, SATA Secretary Gebhard Wagener, SATA President Elect, and Tetsuro Sakai, SATA President, addressed the audience on the State of the Society covering current and future activities. We look forward to seeing you at next year's meeting.

UNOS News

By Flora Simmons, MD

Improvements to MELD and PELD

UNOS will soon be rolling out MELD 3.0 and PELD creatinine and to support this rollout, new and updated fields will be available.

- The data input for all transplant candidates will now include “birth sex” instead of “gender”.
- A new field, “Sex for Purposes of Adult MELD Calculation” will be included for all adult liver candidates.
- MELD 3.0 will include albumin.
- PELD will include creatinine.

The OPTN has scheduled webinars to help transplant programs prepare for the upcoming changes. Please see the link above.

Living Donor Protection Act

UNOS continues to support legislation to reduce barriers to living donation. The Living Donor Protection Act is a bipartisan bill that protects living organ donors from discriminatory barriers such as higher life and disability insurance premiums and denial of coverage based on living donor status.

New Lung Allocation Policy In Effect

The OPTN has launched a new policy for matching lung transplant candidates with organs using a process known as continuous distribution. A weighted score is calculated for each lung transplant candidate and each lung offer from a donor. This system should increase equity and access to transplant.

UNOS Celebrates 25,000 Kidney Transplants Performed In 2022

Thanks to increased donations and innovative organ utilization strategies, there is a new record for kidney transplants. More than 25,000 kidney transplants were performed in 2022.

Research Updates and Interesting Articles

By Michael Trostler, MD

Liver Transplantation in the Management of Cholangiocarcinoma: Evolution and Contemporary Advances

Cholangiocarcinoma is a rare malignancy of the biliary tract <6 per 100K, with unresectable lesions having a median survival of 6-12 months. While many cases remain unresectable, liver transplantation is a viable method of removing the entire lesion. These patients are not able to be listed for transplantation through the normal means due to historically poor outcomes and recurrence, but living donor transplantation through directed donation is an accepted practice. Perihilar cholangiocarcinoma was associated with 51.7% survival at 5 years with neoadjuvant chemotherapy and recurrence rates of 24.1%.

Data suggests liver transplantation has a better survival than intent to curative resection. Further improvements in chemotherapeutic and biological agents may further improve the outcomes and make liver transplant more mainstream for cholangiocarcinoma

Liver Transplantation for the Nonhepatologist

Review of liver transplant indications and complications for those who may have to take care of liver transplant patients before or after transplant.

Enhanced recovery for liver transplantation: recommendations from the 2022 International Liver Transplantation Society consensus conference

International Liver Transplantation Society (ITLS) consensus recommendations of enhanced recovery for liver transplant with grades of recommendation and quality of evidence for preoperative, intraoperative, and postoperative measures for both living and cadaveric recipients and for living donors.

Organ Donation Updates

By Alexandra Ruan, MD

HRSA Announces Organ Procurement and Transplantation Network Modernization Initiative

The Health Resources and Services Administration (HRSA) announced a new modernization initiative to strengthen accountability and transparency in the organ donation system. Proposed changes include:

- Increasing the Fiscal year 2024 budget to $67 million, nearly double from previous years;
- Data dashboards with individual transplant center and organ procurement organization data;
- Modernization of the OPTN IT system;
- Create an independent OPTN board of directors;
- Increase the pool of eligible contract entities to enhance performance and innovation through increased competition

Bridge to HOPE Trial Closes Early

Bridge to Life, Ltd. announced in May 2023 that the results from interim analysis resulted in early enrollment closure of its multicenter, randomized, controlled clinical trial of its hypothermic oxygenated perfusion (HOPE) system. Early results suggest that HOPE is statistically superior to static cold storage (SCS) for the primary trial endpoint of early allograft dysfunction.

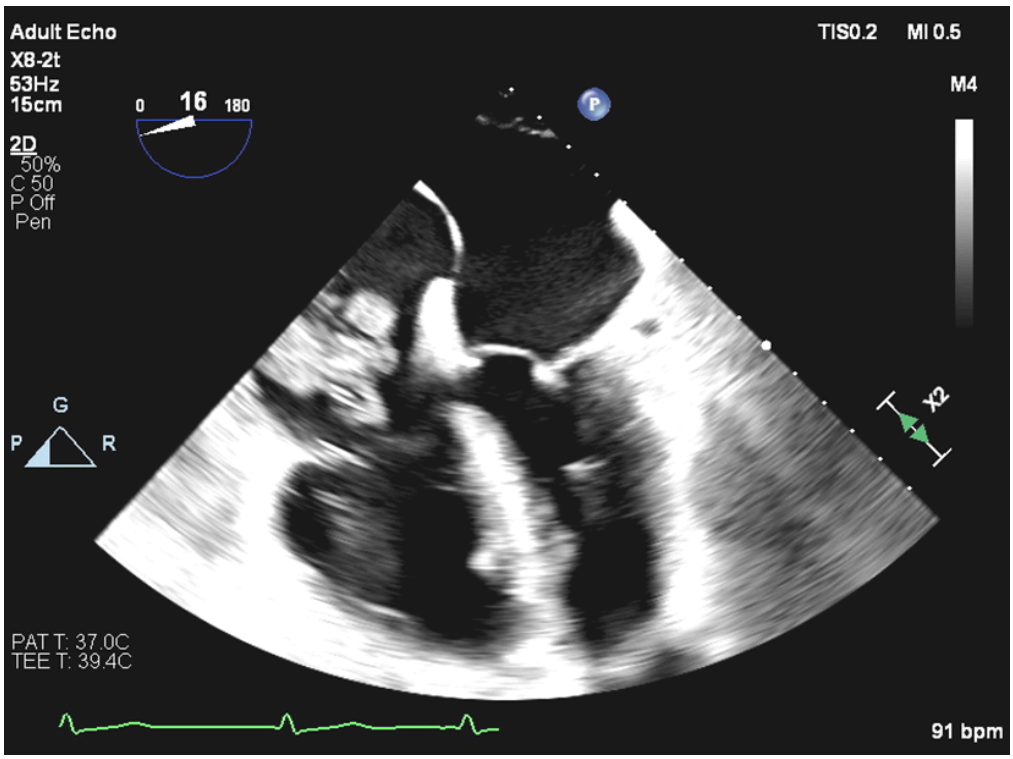
Special Topics/New Publication

By Alex Stoker, MD and Michael Trostler

Intracardiac Thrombosis and Pulmonary Thromboembolism During Liver Transplantation: A Systematic Review and Meta-Analysis

Intracardiac thrombus (ICT) during orthotopic liver transplantation is a rare but potentially catastrophic event, with retrospective studies describing an incidence of 0.4% to 4.2% and a mortality of 40% to 45.5% (P Peiris, MK Groose). ICT is typically diagnosed by TEE (see image below) and has been most often identified around the time of reperfusion in the neo-hepatic phase. Although the pathophysiology of ICT formation during liver transplantation is not completely understood, retrospective studies have described several risk factors for ICT including higher MELD score, preexisting venous thrombosis, atrial fibrillation, higher BMI of donor, prior TIPS procedure, and

longer warm ischemic times. Intravenous heparin administration has been associated with lower incidence of ICT formation when administered prior to IVC clamping and may prevent early-stage thrombus from further progression. Most common during reperfusion and the neo-hepatic phase, typical treatment regimens include heparin or tPA. Treatment from previous articles on the subject recommend heparin to prevent propagation of the clot and in this new meta-analysis, Kumar and colleagues found 76% of patients had prevention of thrombus progression and restoration of hemodynamics. Addition of tPA offered diminishing returns, but should still be considered for flow limiting thromboemboli or hemodynamic compromise (N Kumar).



Midesophageal 4 chamber view in systole showing an intracardiac thrombus in the right atrium, an enlarged and dysfunctional right ventricle and an interatrial septum bowing leftward, likely due to additional pulmonary thromboembolism.

In the Spotlight

By David Rosenfeld, MD

The Mayo Clinic Enterprise Abdominal Organ Transplant Program

The Mayo Clinic was officially founded in Rochester, MN, in the late 1800s under the leadership of surgeons Will and Charles Mayo. The entire Mayo system currently encompasses over 76,000 employees divided between the three destination sites in Rochester, Jacksonville (founded 1986), and Phoenix/Scottsdale (founded 1987), and twenty smaller regional centers in the midwest. Mayo was an early pioneer in transplantation with their first kidney in 1963 and currently are one of the largest abdominal transplant networks in the world with 1,035 kidneys, 525 livers, and 52 pancreases transplanted in 2022 between the three destination sites in Minnesota, Florida, and Arizona. Each of these centers function independently within their regions, however there is significant collaboration between the surgical and anesthesiology departments clinically, and academically. There exists an internal Mayo live donor kidney exchange program, and three site Mayo Clinic group has joined the SATA Transplant Database Project in 2022.

Alexandra Anderson, MD, is Section Head of Solid Organ Transplant Anesthesiology at the largest Rochester campus which performed 311 kidney transplants, 130 livers, and 9 pancreas transplants in 2022. Their living donor liver transplant program has grown, and the anesthesia team has developed specific multimodal protocols for donor analgesia. The kidney transplant team performs simultaneous bilateral nephrectomy and kidney transplantation for polycystic kidney disease. Ongoing anesthesia research efforts are underway focusing on cardiac assessment in liver transplant patients and analgesia in kidney transplant patients. Quality improvement practices have resulted in TEE education for attendings, emergency ECMO activation workflow pathways, and standardized protocols for venovenous bypass in cases where this is used.

Stephen Aniskevich III, MD, is Chair, Division of Hepatobiliary and Abdominal Transplant Anesthesia in Florida. Their abdominal transplant team consists of 9 attendings who cover all liver, kidney, and pancreas transplants. The Florida campus performed 144 livers, 225 kidneys, and 12 pancreas transplants in 2022 and is the #1 ranked program with regards to liver transplant outcomes in the US. Mayo Florida is also one of the few centers worldwide performing fast track anesthesia for liver transplantation with 60% of patients bypassing the ICU, with admission directly to the ward following their transplant. The anesthesia team also actively participates in their complex high-risk liver selection committee. This multispecialty group evaluates patients who would have historically been denied liver transplant and devises novel, individualized treatment strategies to allow for surgery such as pre-emptive ECMO for pulmonary hypertension and a variety of strategies for management of complex cardiac conditions during transplant. The surgical team utilizes a wide array of organ preservation strategies including NRP, NMP (OCS and Organox) and is participating in studies using hypothermic oxygenated machine perfusion.

Peter Frasco, MD, is Section Head, Abdominal Organ Transplant Anesthesiology at the Arizona campus which includes 8 highly dedicated attendings. The Arizona campus was the busiest abdominal transplant center in the US in 2022 with 499 kidneys, 245 livers, and 29 pancreases performed with 9 surgeons. They also performed their first combined cardiac/liver/kidney transplant in 2023. The liver transplant team at Mayo Arizona initiated a normothermic machine perfusion protocol utilizing the OCS™ device (TransMedics, Inc.) in late 2021. To date NMP has been used in over 160 liver transplants. In addition to the well-described intraoperative benefits of reduced occurrence and severity of reperfusion syndrome, and decreased blood product utilization, preliminary data shows that none of the 145 patients who have received a DCD allograft maintained with the OCS™ device have developed ischemic cholangiopathy.

Many thanks to the Mayo Clinic Enterprise teams for sharing these wonderful details. If interested in having your program highlighted in the future, please contact David Rosenfeld at Rosenfeld.david@mayo.edu

Announcements

SATA Seed Grant Award Winner

The SATA Research Committee was pleased to present the first $5000 SATA Seed Grant to Dr. Elizabeth Townsend of University of Wisconsin to support her research on Kupffer cell inflammatory processes leading to fibrosis and end stage liver disease.

Dr. Townsend's work on the P2X7 receptor on Kupffer cells that activates inflammatory eicosanoids as a cause of asthma recently earned a FAER grant. Now she is turning her attention to inflammation and fibrotic remodeling in liver disease. The SATA starter grant is open to early career society members and trainee physicians to support aspiring researchers as they apply to other agencies in funding for transplant projects. Congratulations to Dr. Townsend

SATA has just closed the open nomination process for the next Councilors at Large and Treasurer. Thank you to all of our members who applied and those who nominated others. The final candidates will enter an open election where the membership will decide their next representatives. Please look for the upcoming voting announcements.

SATA will now be at the ASA. SATA and the ILTS have joined forces to provide all anesthesiologists interested in transplantation an opportunity to participate in a one-day meeting on the Friday immediately before the start of the ASA in San Francisco.

Vanguard Committee Recruiting New Members

The Vanguard Committee hosted a SATA Sponsored networking event immediately after the Annual Meeting in Denver, CO. The event was an opportunity for junior SATA members to network and discuss ideas for future SATA projects. If you are interested in joining the Vanguard Committee please fill out this survey

Transplant Anesthesia Upcoming Meetings

SATA Meetings

ILTS & SATA Perioperative Care in Liver Transplantation Meeting 2023
October 13, 2023, 8am-5pm. UCSF Mission Bay Conference Center, San Francisco CA

Other Meetings:

41st Annual Scientific meeting (ASM) of the Transplantation Society of Australia and New Zealand (TSANZ) June 17-20, 2023, Brisbane, Australia

18th Congress of the Intestinal Rehabiliation and Transplant Association (CIRTA 2023)
June 30-July 3, 2023, Chicago, IL

27th Annual Meeting of the Society of Pediatric Liver Transplant (SPLIT 2023) October 16-17, 2023, Montreal, QC

16th Organ Donation Congress (ISODP 2023) October 18-21, 2023 Las Vegas, NV