SATA Liver Transplant Anesthesia Database Project

We would like to introduce SATA’s new multicenter database project aimed at quality improvement in liver transplant anesthesia. The goal of this program is to help transplant centers establish their own quality improvement database to better understand practice patterns within each transplant center. Additionally, the goal is to enable multi-center research projects based on prospectively collected data. This project is based on a similar program by transplant surgeons, the National Surgical Quality Improvement Program (NSQIP) Transplant which tracks surgical data and outcomes in liver and kidney transplants. Our team was able to interview executive members from NSQIP Transplant and from the SATA Liver Transplant Anesthesia Database Project. We were able to obtain quite a bit of intel about the newest QI project, how it was formed, and the future direction.

**Dr. Stuart Greenstein** is one of the co-founders of NSQIP Transplant. He is also a UNOS certified transplant surgeon and dedicated senior member of the Montefiore Medical Center Transplant Program.

**SATA:** Dr. Greenstein, what is NSQIP Transplant and what was the impetus behind its creation?

**Dr. Greenstein:** NSQIP Transplant is a quality improvement tool designed specifically to track surgical outcomes in adult liver and kidney transplantation. It was designed by transplant surgeons to include variables unique to the field of transplantation in addition to standard clinical and demographic data. Prior to this project, tracking and monitoring was limited to basic graft and recipient survival, so there was no national data on post-transplant surgical complications or outcomes.

**SATA:** What other variables are tracked?

**Dr. Greenstein:** Recipient and donor demographics such as comorbidities, ischemia times, anatomy variation. Outcomes such as readmission, return to OR, surgical site infections, complications. We also track whether it is a living or deceased donor. At this time, we are not including multi-organ transplants.

**SATA:** This program was built from the ground up by transplant surgeons using the infrastructure from the American College of Surgeons National Surgical Quality Improvement Program (NSQIP). What were some of the difficulties or setbacks with constructing such a program?

**Dr. Greenstein:** Well, initially we found that some of the variables we included were too detailed or impractical for each center, so it took some time to finetune variables that were most important.

**SATA:** In what stage is the program in now?

**Dr. Greenstein:** NSQIP was created in 2013 and the initial pilot phase occurred in 2016. At this point, we have 28 participating sites and includes more than 4300 recipient-donor pairs in the database. At this point, we are waiting for the final platform to be developed based on negotiations between ACS and ASTS.

**SATA:** Any future plans for the program?

**Dr. Greenstein:** Yes. We would like the program to expand to all transplants since right now it is just for adult liver and kidneys. We strive to expand to pancreas, heart, lungs, multi-organ, and pediatric patients. One of our other major goals is to create a cardiac risk calculator specifically for transplant.

**SATA:** You have been instrumental in helping to create and help launch the SATA Liver Transplant Anesthesia Database Project, which is based on the infrastructure of NSQIP Transplant. What are your thoughts on the anesthesia model?

**Dr. Greenstein:** Our plan is to be able to associate SATA’s variables in to the NSQIP Transplant so that the database is easily accessible for both surgical and anesthesia outcomes.

**SATA:** How do you think these national databases will change the transplant community?

**Dr. Greenstein:** It will allow clinicians and programs the ability to look at their program and compare their outcomes to other programs and learn from them.

**Dieter Adelmann**, MD, is one of the principal investigators for the SATA Liver Transplant Anesthesia Database Project. He is also an assistant professor of anesthesia at the University of California in San Francisco.

**SATA:** Can you give us a brief description of this program and why it’s important to the transplant anesthesia community?

**Dr. Adelmann:** It is a project to help transplant centers start their own QI data collection. The goal is to enable multicenter research projects based on prospectively collected data and to allow the assessment of practice patterns and outcomes.

**SATA:** What variables will be included?

**Dr. Adelmann:** Intraoperative practices such as TEE, PA catheter use, intraoperative dialysis, and transfusions. We’ll also use outcome variables such as extubation, acute kidney injury, ICU length of stay, and complications.

**SATA:** How many participating sites are you expecting?

**Dr. Adelmann:** At our recent interest meeting we discussed about 15 centers that are interested, but ideally at least 10 centers.

**SATA:** When will the first pilot program/ phase occur?

**Dr. Adelmann:** Our first goal is to encourage each center to get IRB permission for its own center. We will help them create their own QI database and add standardized variables. Centers with existing databases can add variables and adjust their variable definitions. Centers without an existing database can use a REDcap template or their preferred platform to set up their own database. Each center has the option to share data for research, but sharing is not mandatory for joining the program. We will later expand to sharing for those programs that are interested.

**SATA:** What are the future avenues for the program?

**Dr. Adelmann:** Our plan is to eventually link the data with other data sources such as SRTR, NSQIP Transplant – to avoid redundant data entry. In the future, we would also like to have an automated data export from the electronic medical record.