

OPTN Kidney Transplantation Committee

Meeting Summary

July 18, 2022

Conference Call

Martha Pavlakis, MD, Chair

Jim Kim, MD, Vice Chair

Introduction

The Kidney Transplantation Committee (the Committee) met via teleconference on 7/18/2022 to discuss the following agenda items:

1. Liver Committee Presentation: Simultaneous Liver Kidney Project
2. Histocompatibility Committee Presentation: Confirmatory Typing
3. Update on the Continuous Distribution Project Timeline
4. Committee Orientation

The following is a summary of the Committee’s discussions.

1. Welcome and Announcements

Staff and the Committee Leadership welcomed several new members to the Committee. Committee Leadership also shared that the three Kidney Committee-sponsored proposals, *Establish Requirement for Race-Neutral eGFR Calculations*, *Minimum Kidney Donor Criteria to Require Biopsy*, and *Standardize Kidney Biopsy Reporting and Data Collection* were passed by the Board of Directors at the June 2022 meeting.

Summary of discussion:

The Committee had no comments or questions.

2. Liver Committee Presentation: Simultaneous Liver Kidney Project

The ex-officio Chair of the Liver and Intestinal Transplantation Committee presented a new potential project to expand required simultaneous liver kidney (SLK) allocation.

Presentation summary:

Current multi-organ allocation policy differs across extra-renal organ combinations.

	Liver-Kidney	Heart-Kidney	Lung-Kidney
Primary organ criteria (adult)	150 nm: MELD/PELD 15+ 250 nm: MELD/PELD 29+ 250 nm: Status 1A or 1B	500 nm: Status 1, 2, 3, 4, or 5	Composite Allocation Score 28+ (accounts for geography)
Kidney criteria*	Chronic kidney disease Sustained acute kidney injury Metabolic disease	Chronic kidney disease Sustained acute kidney injury	Chronic kidney disease Sustained acute kidney injury
Pediatric candidates	Unrestricted	Within 500 nm	Unrestricted

After making required SLK shares, the OPO can either offer the liver and kidney to candidates meeting the SLK criteria who are outside of the required sharing geographic circles and MELD/PELD thresholds (permissible SLK shares) or offer the liver to liver-alone candidates and kidney to kidney alone candidates.

The liver community has expressed a primary concern that SLK candidates are limited to kidney offers only within 150/250 NM.

- Donor availability – donor availability differs across the country
- Consistency –SLK circles should be larger to align with other organs
- OPO discretion – after required SLK shares, OPO can then choose to allocate liver to liver-alone and kidney to kidney-alone or offer the kidney and the liver to other SLK candidates. The presenter commented it can be difficult to get OPOs to offer kidney with liver for SLK candidates that don't meet the required sharing thresholds

The Liver Committee proposes expanding the required sharing circle size for SLKs from 250 NM circles to 500 NM circles, such that the kidney must be offered with the liver if the candidate is:

- An SLK candidate with a MELD/PELD 15 or greater within 150 NM
- An SLK candidate with a MELD/PELD 29 or greater within 500 NM
- An SLK candidate with Status 1A or 1B within 500 NM

The Liver Committee plans to bring the project to the Policy Oversight Committee for approval in August or September. The intent would be to implement changes prior to continuous distribution.

Summary of discussion:

One member asked whether the policy updates proposed in this project would need to be re-engineered to fit into continuous distribution when liver allocation switched to a continuous distribution framework. The Liver Committee representative agreed that continuous distribution would impact this policy, as it will impact all liver allocation. The Liver Committee representative noted that there are varying views on the rapidity with which liver continuous distribution will be developed and approved. The Liver Committee representative ultimately agreed that this policy would need to be reconsidered when liver continuous distribution is discussed.

The Vice Chair shared that many members of the Kidney Committee also work with liver transplant patients and are sensitive to issues in the liver allocation scheme. The Vice Chair noted that it is also important to be sensitive to where kidneys are shared, particularly with simultaneous heart kidney (SHK), simultaneous lung kidney (SLuK), SLK, and Kidney-Pancreas (KP) allocation and a large population of kidney-alone potential transplant recipients registered on the kidney waiting list. The Vice Chair pointed out that there is currently a liver-kidney safety net policy, which provides priority for liver recipients that don't receive an SLK transplant but still need a kidney. The Vice Chair added that a safety net policy for SHK and SLuK was also recently approved. The Vice Chair asked if this project proposes a policy to give additional rules for OPOs to follow, as it is currently up to OPO discretion outside of the circle, or if this would change the whole of SLK allocation policy. The Vice Chair noted that, if it's the latter, the safety net policy already covers those liver candidates who do not receive an SLK but end up needing a kidney transplant. The Liver representative shared that the primary goal of this project would be to increase uniformity in how extra-renal multi-organ combinations are allocated. The Liver Committee representative noted that organs allocated between 250 NM and 500 NM are typically allocated to very sick patients, and that it is frustrating for liver clinicians to receive a liver match for a high MELD patient 400 NM away from the donors, only to learn that the patient won't receive the

kidney as well due to an arbitrary decision on the part of the OPO. In these cases, the sick, qualifying SLK patient can't get the transplant they need. The Liver Committee representative remarked that the SLK policy initially should have utilized a 500 NM circle, and added that the SLK safety net policy is insufficient. The Liver Committee representative shared that their program has had very few patients who qualify for the safety net able to actually access the safety net, due to the development of chronic renal disease, which creates other issues such as infection and frailty that ultimately disqualify them from being eligible to be operated on. The Liver Committee representative noted that this type of data is not collected by the OPTN, but is often collected at a center level.

The Vice Chair agreed that it would be important to review data, and noted that it's likely peoples' experiences with the SLK and safety net policies differ. The Vice Chair remarked that it's recognized widely that most patients who need an SLK are very sick, and that the best outcome for both the patient and the liver graft is to also transplant a kidney. The Vice Chair explained that the parameters of the safety net are intended to reflect the possibility that a patient who may have been eligible to receive an SLK transplant but received only a liver-alone transplant may have renal recovery to the point that they no longer need a kidney transplant. The safety net parameters are also intended to capture those liver transplant recipients who develop renal insufficiency or renal failure after their liver transplant, and ensure those patients have priority, as a kidney transplant greatly benefits that patient's liver graft outcomes. The Vice Chair emphasized that data regarding the use of the safety net policy should be reviewed, and shared that their program does utilize the SLK safety net. The Vice Chair explained that there are many SLK patients who don't receive a kidney with the liver, either because the kidney was not allocated with the liver or because the kidney doesn't work anatomically, or some other reason. The Vice Chair continued that these patients often may utilize the safety net policy, and tend to get sufficient priority to receive a kidney transplant within the first year. The Vice Chair noted that an argument could be made that those patients who were too sick to receive a safety net kidney were not necessarily strong candidates for combined organ transplant either. The Vice Chair reiterated the importance of reviewing objective data on the use of safety net and the barriers to using the safety net policy.

One member asked what criteria are currently in use to distinguish those with hepatorenal syndromes that will improve upon liver transplant from those patients who truly need a kidney transplant. The member asked if this is a documented distinction or diagnosis by the transplant center, or if there was some kind of biopsy requirement. The Liver Committee representative explained that the criteria are written into policy, and are based on the duration and severity of their GFR under sustained acute kidney injury or chronic kidney disease. The Liver Committee representative explained that, to qualify, patients need to demonstrate some degree of chronic renal insufficiency and have an estimated GFR below a certain threshold.

Another member asked how the waiting time for SLK patients compares to liver alone and kidney alone patients. The Liver Committee representative expressed that he wasn't certain of the exact numbers, but that generally, SLK patients are sicker and so generally have shorter waiting times for liver transplant than most liver alone patients.

3. Histocompatibility Committee Presentation: Confirmatory Typing

A representative of the Histocompatibility Committee presented a project to require confirmatory human leukocyte antigen (HLA) typing for deceased donors.

Presentation summary:

This project stems from a letter written by a histocompatibility lab director who was concerned about the current lack of required redundancy for HLA typing, as compared to ABO typing. Both are critical to determine patient and donor compatibility.

The Histocompatibility Committee discussed these concerns and risks:

- Inclusion of incorrect HLA typing in the match run may mean offers are given to patients highly sensitized against the donor
- Virtual crossmatching or assessment of immunologic risk requires correct HLA typing to determine candidate/donor matches and donor service area (DSA)
 - This affects both acceptance/rejection of an organ offer and peri-transplant care for the recipient
- Crossmatches and confirmatory typings often occur after transplant for hearts and lungs
 - Potential for hyperacute or accelerated rejection

The Histocompatibility Committee decided to recommend several steps to mitigate risk and increase safeguards to ensure correct donor HLA typing. This includes some redundancy in the system of HLA typing and requiring confirmatory HLA typing in policy.

- Deceased donors should have two HLA samples run, drawn at two separate times, similar to ABO
 - Possibly further discussion on best practices for different sample types or assays
 - Did not want to create requirements that would increase the time to allocation or burden on staff
 - Both typing results would be required at the same reporting timeframe as current policy
 - Necessary to ensure typings are not discrepant and to ensure efficiency and safety
 - Samples able to be run in parallel so as not to increase turnaround time for HLA typing
- Both samples should be typed at a molecular level for all loci
- Require raw HLA typing data to be uploaded for both samples as an attachment

Summary of discussion:

One member expressed support for the project, and asked if there were any cases where incorrect donor HLA typing demonstrably led to a case of hyper acute rejection. The Histocompatibility Committee representative explained that the Histocompatibility Committee has not yet seen a case like this, but that the Histocompatibility Committee tracks instances where the donor typing in the match differs from that reported on the donor or recipient histocompatibility forms that are entered post-transplant when confirmatory testing is done. The Histocompatibility Committee representative shared that there is a rate of about 0.5 percent of donor typings used in allocation that have an error, which is not necessarily insignificant, considering the number of donors allocated each year. The Histocompatibility Committee representative shared that the Histocompatibility Committee is working to trace the circumstances for these errors in greater detail, but that the data given for these reviews are blinded. Up to this point, however, the Histocompatibility Committee has not yet found a circumstance that demonstrably led to a case of hyper acute rejection. The member asked if the 0.5 percent of donor typings that have errors are due to recording errors or other types of errors. The Histocompatibility representative responded that the Histocompatibility Committee doesn't have a way to tell based on the analyses performed to find these errors, but that it appears the majority of these errors are due to transcription errors. The Histocompatibility representative pointed out that a policy change requiring double entry of candidate and donor typing drastically reduced the percent of typing errors. The Histocompatibility representative explained that though most of these errors are likely due

to transcription, there are still very few cases where assays didn't perform properly or missed typing on a certain locus.

The Vice Chair expressed support for the project, noting that this would be particularly valuable with the move towards virtual crossmatching. The Vice Chair noted that if some typing was entered incorrectly and the virtual was positive, that error may not be captured if there was a mistake. The Vice Chair asked if, from an OPO perspective, there are logistical barriers to this solution. The Histocompatibility representative pointed out that drawing two samples is a common practice for ABO, and that the setup would be the same for drawing two samples for histocompatibility typing, as ABO and typing samples are often drawn at the same time anyway. The Histocompatibility representative noted that the time requirement is less than 20 minutes between sample draws, so it shouldn't be too much of a logistical burden.

One member remarked that the Histocompatibility Committee should consider the amount of blood this would require to be drawn from a donor, particularly as this project would double the amount of blood drawn for typing purposes. The member noted that this will be a problem for some patients, and that OPOs already need to stagger the time quite a bit for pediatric donors, low weight donors, and donors that have bled a lot. The member added that there needs to be a re-evaluation of how much blood is drawn for each patient. The Histocompatibility representative responded that this was something OPOs would need to work with their histocompatibility labs on, as the amount of blood needed to perform typing is minimal. In circumstances where volume is an issue, the OPO should communicate with their histocompatibility labs to solve how to work around that issue.

4. Continuous Distribution Project Timeline

Staff presented an update on the Continuous Distribution timeline. The Kidney-Pancreas Continuous Distribution Workgroup has decided to push back the project timeline by one board cycle, to allow for the submission of a second modeling request and give the project appropriate time for discussion and development.

Summary of discussion:

The Vice Chair expressed support for this shift in the project timeline, noting that the continuous distribution project is a large endeavor. The Vice Chair noted that it may take some time for new members to get up to speed on the concept and discussions behind continuous distribution.

5. Committee Orientation

New members were oriented to the ongoing work of the Committee and the structure of the OPTN.

Summary of discussion:

One member asked, with respect to post-transplant survival in continuous distribution, if the Workgroup has decided to match the kidney donor profile index (KDPI) and estimated post-transplant survival (EPTS) scores. The member continued that this would allow us to maximizing allocation so there is good matching between the expected longevity of the candidate and the expected longevity of the organ. The member suggested that, rather than having a KDPI for a given organ, an individualized KDPI could be developed for each recipient based on relative age and size. Staff explained that there have been discussions regarding longevity matching as part of the first modeling request. Current policy incorporates top 20 KPDI to top 20 EPTS matching, but the Committee is looking into potentially expanding that, and will see the effects of expanded longevity matching in the modeling. The member shared that it just doesn't seem right to allocate younger, healthier kidneys with long expected graft

longevity to older patients with shorter expected survival. The Vice Chair agreed, noting that the continuous distribution framework will be a step towards greater fairness.

The Vice Chair explained that it can be difficult to comprehend continuous distribution initially, particularly with respect to the different components and how the attributes are prioritized. The Vice Chair explained that each component was thoroughly discussed, and that this modeling request was only the initial modeling request. The Vice Chair added that even KDPI and EPTS are imperfect surrogates to simplify some decisions. The Vice Chair noted that there are a lot of components of continuous distribution to work through, but that each Committee member has a voice and should ask pertinent questions and share their thoughts. A member agreed there was a lot of modeling to be done in building the continuous distribution allocation framework.

The Committee had no additional questions or comments.

Upcoming Meetings

- August 17, 2022 - Teleconference

Attendance

- **Committee Members**
 - Jim Kim
 - Arpita Basu
 - Beatrice Concepcion
 - Chandrasekar Santhanakrishnan
 - Tania Houle
 - Jason Rolls
 - Jesse Cox
 - Marian Charlton
 - Marilee Clites
 - Oscar Serrano
 - Stephen Almond
 - Patrick Gee
 - Peter Lalli
 - Precious McCowan
 - Sanjeev Akkina
- **HRSA Representatives**
 - Jim Bowman
 - Marilyn Levi
 - Raelene Skerda
- **SRTR Staff**
 - Grace Lyden
 - Peter Stock
- **UNOS Staff**
 - Lindsay Larkin
 - Kayla Temple
 - Ross Walton
 - Betsy Gans
 - Carly Engelberger
 - James Alcorn
 - Kaitlin Swanner
 - Keighly Bradbrook
 - Kimberly Uccellini
 - Krissy Laurie
 - Lauren Mauk
 - Lauren Motley
 - Matt Belton
 - Sara Moriarty
 - Stryker Ann Vosteen
 - Susan Tlusty
 - Ruthanne Leishman
 - Melissa Lane
- **Other Attendees**
 - Jim Trotter