

OPTN Kidney & Pancreas Transplantation Committee Continuous Distribution Workgroup

Meeting Summary

April 23, 2021

Conference Call

Silke Niederhaus, MD, Chair
Rachel Forbes, MD, Vice Chair
Vince Casingal, MD, Chair
Martha Pavlakis, MD, Vice Chair

Introduction

The Kidney & Pancreas Transplantation Committee Continuous Distribution Workgroup (the Workgroup) met via Citrix GoToMeeting teleconference on 4/23/2021 to discuss the following agenda items:

1. Welcome & Review of Project Goals
2. Review and Discussion: Results of Blood Type and calculated panel reactive antibodies (cPRA) Data Request
3. Wrap Up & Next Steps

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

1. Welcome & Review of Project Goals

The Workgroup reviewed the scope of the Continuous Distribution project, which is to change allocation from a classification-based system to a points-based system. The Workgroup is currently in the second phase of the project where they will be assigning values to the kidney and pancreas attributes and developing a concept paper.

Summary of discussion:

There was no discussion.

2. Review and Discussion: Results of Blood Type and calculated panel reactive antibodies (cPRA) Data Request

The Committee reviewed the results of the blood type and calculated panel reactive antibodies (cPRA) data requests that were submitted in January.

Data summary:

Blood Type – Kidney

Number of Candidates Ever Waiting in 2020 by Blood Type

- Blood Group O = 64,345
- Blood Group A = 35,841
- Blood Group B = 19,731
- Blood Group AB = 3,591

Number of Donors Recovered in 2020 by Blood Type (n=11925)

- Blood Group O = 5,661 (47%)

- Blood Group A = 4,435 (37%)
- Blood Group B = 1,390 (12%)
- Blood Group AB = 439 (4%)

Number of Compatible Deceased Donors and Probability of Compatibility by Blood Type

Candidate ABO	Compatible blood type	N. Compatible Donors	Prob. of Compatibility	Prob. of Incompatibility
O	O (5661)	5,661	0.47	0.53
A	O (5661) + A (4435)	10,096	0.85	0.15
B	O (5661) + B (1390)	7,051	0.59	0.41
AB	O (5661) + A (4435) + B (1390) + AB (439)	11,925	1.00	0.00

**Note: Based on a total of 11,925 deceased kidney donors recovered in 2020*

When using a linear approach for the ABO rating scale for kidney, candidates of each blood group would receive points equal to the blood groups' probability of incompatibility. However, the Histocompatibility Committee recommended using a nonlinear approach.

Candidate Non-A1 and Non-A1B Eligibility Status - Kidney

- Out of the 16,685 kidney candidates waiting in December 2020, 1,338 (8%) were eligible for non-A1 and non-A1B status and 60% of candidates had an unknown status.
- About 10% of blood type B kidney recipients received non-A1/A1B donor kidneys.
- 528 (4%) of the deceased kidney donors recovered in 2020 were blood type B with non-A1/A1B eligibility.

Candidate ABO	Compatible blood type	N. Compatible Donors	Prob. of Compatibility	Prob. of Incompatibility
B (non-A1/A1B eligible)	O (5661) + B (1390) + non A1/A1B (528)	7,579	0.64	0.36

Blood Type – Pancreas

Number of Candidates Ever Waiting in 2020 by Blood Type

- Blood Group O = 413
- Blood Group A = 355
- Blood Group B = 102
- Blood Group AB = 34

Number of Donors Recovered in 2020 by Blood Type (n=1265)

- Blood Group O = 659
- Blood Group A = 441
- Blood Group B = 150
- Blood Group AB = 15

Number of Compatible Deceased Donors and Probability of Compatibility by Blood Type

Candidate ABO	Compatible blood type	N. Compatible Donors	Prob. of Compatibility	Prob. of Incompatibility
O	O (659)	659	0.52	0.48
A	O (659) + A (441)	1,100	0.87	0.13
B	O (659) + B (150)	809	0.64	0.36
AB	O (659) + A (441) + B (150) + AB (15)	1,265	1.00	0.00

**Note: Based on a total of 1,265 deceased pancreas donors recovered in 2020*

Blood Type – Kidney-Pancreas

Number of Kidney-Pancreas Candidates by Blood Type

- Blood Group O = 1,014
- Blood Group A = 681
- Blood Group B = 344
- Blood Group AB = 62

Summary of discussion:

A Chair inquired, since this data is based on proportions from 2020, if the rating scales will be mapped year after year or if the 2020 probability of ABO compatibility will be used for the next few years. The Chair emphasized that patients' cPRA changes, so the proportion of incompatible potential donors doesn't change that much, however, this is based on ratings just for a given year. Staff said that they can check to see if there are major changes in distribution of blood type compatibility from year to year since it's something the Workgroup wants to be confident in before moving forward.

A member inquired if the 60% of kidney patients with unknown status were included in the non-A1/A1B non-eligible (blood type B) group. Staff explained that unknown status patients were not included in the non-eligible group.

A member stated that they aren't understanding the incompatibility probability score because 60% of patients weren't included and inquired if this would be an accurate score. The member inquired if there's data on how many candidates with an unknown status for non-A1/A1B eligibility have been assigned incompatible kidneys. Staff explained that the incompatible probabilities are based off of donor data and they have data on the blood type, including the A subtyping, for all deceased donors. The probability of incompatibility for non-A1/A1B eligible candidates demonstrates that, for example, patients who have opted into a program and meet the center's titers thresholds, will have a bigger pool of donors than those candidates with non-A1/A1B non-eligible status. Staff explained that the

probabilities aren't missing any data, but this begs the question of how the Workgroup wants to treat those patients that have an unknown status for non-A1 or non-A1B blood types.

A Chair stated that patients who have unknown status are usually listed as unknown because the program doesn't assess anti-A titers. The Chair mentioned that there are two approaches to handling unknown status: (1) force programs to develop policy and a system to check titers or (2) make non-A1/A1B eligibility a yes or no response. The Chair emphasized that, whatever the Workgroup decides, it should encourage programs to develop a policy to give blood type B patients access to non-A1 donors.

A Chair inquired if there are rules in kidney policy that state blood type O organs go to blood type O candidates in order to not draw organs away from that population. A Chair stated that that's correct for blood type O, but blood type A organs could go to blood type AB candidates, even though A candidates have a longer waiting time than AB candidates. A Chair inquired if this is what the Workgroup should be addressing or should these policies be maintained in continuous distribution. A Chair stated that the goal for the Workgroup is to recreate what is currently in policy, while making minor changes in order to increase equity.

A Chair mentioned that a project aiming to offer blood type O kidney-pancreas (KP) to any blood type candidate was stopped because it would pull organs away from O candidates. Staff explained that there is a chart in Policy 8.5.D that details which blood type is matched with which blood type. A Chair expressed concern with drawing blood type O organs away from blood type O candidates, but mentioned there is an opportunity in blood type A and non-A1s for blood type B and AB candidates. Staff explained that the Workgroup should also remember that weights will come into play after the rating scales and emphasized that the composite score is looking at the entire patient profile, so wait time or high sensitization may prioritize other candidates above a blood type O candidate.

A Chair stated that they can envision that the Workgroup may support blood type O organs being offered outside of the blood type O candidate population in the situation where a candidate is never going to match with blood type A, B, or AB. The Chair also noted that, in the current system, a non-A1 donor will go to a B candidate first – a non-A1B candidate who's eligible versus an A candidate, equal in all other aspects.

A Chair mentioned that the probability of compatibility for blood type A candidates is being calculated with blood type O and A donors; however, blood type A candidates don't have access to blood type O kidneys. A Chair inquired if the Workgroup is wanting to allow blood type A candidates access to O kidneys. For example, would the Workgroup want a blood type A candidate with cPRA of 100%, 20 years of wait time, and a negative cross-match to receive that blood type O kidney or would the Workgroup want the kidney to stay in the blood type O list since it's longest list.

A Chair inquired if the Workgroup wants to use the blood type rating scale as a way to increase access. The Chair stated that they don't think the Workgroup will want to take kidneys away from blood type O candidates, but this is the opportunity to look at blood type in a continuous distribution fashion. A Chair stated that, in order for them to justify taking blood type O kidneys away from blood type O candidates, the candidate would have to hit a really high threshold – pediatric, blood type A, 18 years of wait time, and high cPRA. It was mentioned that these instances should be very rare.

A Chair inquired about how to account for those scenarios. The Chair inquired if the Workgroup could give candidates extra points for being blood type O in order to balance out the probability of finding compatible donors and give no points to blood type AB candidates.

Staff summarized by stating that a candidate would need to meet a very high threshold in order for a blood type O organ to be offered to a non-O candidate and that scenario should not be common. Staff

stated that it seem a linear scale for blood type isn't going to work the way the Workgroup would like it to.

A member suggested keeping a linear rating scale for blood type and then, in these very rare situations, cPRA could be weighted enough so that it would overcome the priority for blood type. Staff provided an example stating that, on a linear scale, a blood type O candidate with a cPRA of 0 would receive 50 points for having blood type O and 0 points for their sensitization. However, a blood type AB candidate with a cPRA of 100 would receive 100 points due to their high sensitization and 0 points for their blood type. In this situation, assuming all else is equal, the highly sensitized candidate is going to receive more priority than the blood type O candidate.

An Scientific Registry of Transplant Recipients (SRTR) representative mentioned that the current cPRA sliding scale is similar to a rating scale – it gives a certain number of points for different levels of cPRA. The scale was developed based on the relative rate candidates received offers. The SRTR representative noted that, mathematically, the current scale is non-linear and close to 1 divided by the probability of compatibility. For example, a cPRA 98 candidate matches with twice as many donors as a cPRA 99 candidate, so because they match with twice as many donors they would get half as many points. The SRTR representative stated that there are two questions that need to be answered in regards to intermingling blood type compatibility with cPRA compatibility points:

- How many points should a blood type O candidate get in comparison to other candidates?
- How important should blood type matching be relative to cPRA matching?

A Chair stated that they believe the overall consensus is that blood type O kidneys should be protected for blood type O candidates. The Chair inquired if the Workgroup could determine when non-A1 organs are offered to blood type A or B candidates and how the Workgroup would like to prioritize them, since a blood type B recipient gets much more priority for non-A1 kidneys.

A Chair mentioned that blood type B candidates receiving priority for non-A1 kidneys was instituted to give priority to underrepresented patients and to decrease the disparity for blood type B waitlisted patients compared to blood type A patients. The Chair mentioned that they believe that has been helpful and emphasized that, when a blood type B patient receives that non-A1 kidney, it not only benefits the recipient but it also benefits the whole blood type B list.

A Chair summarized by stating that there are very few circumstances where the Workgroup wants to see a blood type O kidney go outside of blood type O and there are some circumstances where the Workgroup wants to see a non-A1 donor go to the A blood group. Members agreed.

A Chair emphasized that they agree with everything that's been discussed for kidney and simultaneous pancreas kidney (SPK), but mentioned that blood type may need to be looked at differently for pancreas alone. It was explained that pancreata are often discarded and if a local surgeon has a blood group O recipient on the list and is willing to use the blood type O kidney, then that option should remain open because it could prevent discards. A Chair noted that prioritizing rapid placement or local placement may be important for pancreas.

3. Wrap Up & Next Steps

The Committee should take time to review the discussion questions regarding the blood type and cPRA rating scales and come with feedback to the next meeting.

Upcoming Meetings

- May 21, 2021 (Teleconference)

Attendance

- **Committee Members**
 - Vincent Casingal
 - Silke Niederhaus
 - Martha Pavlakis
 - Rachel Forbes
 - Arpita Basu
 - Abigail Martin
 - Amy Evenson
 - Caitlin Shearer
 - Deirdre Sawinski
 - Oyedolamu Olaitan
 - Peter Kennealey
 - Piotr Witkowski
 - Sommer Gentry
- **HRSA Representatives**
 - Jim Bowman
 - Marilyn Levi
- **SRTR Staff**
 - Ajay Israni
 - Bryn Thompson
 - Jon Miller
 - Nick Salkowski
 - Jodi Smith
- **UNOS Staff**
 - Joann White
 - Lindsay Larkin
 - Rebecca Brookman
 - Kayla Temple
 - Ross Walton
 - Tina Rhoades
 - Alison Wilhelm
 - Amanda Robinson
 - Amber Wilk
 - Joel Newman
 - Kerrie Masten
 - Nang Thu Thu Kyaw