OPTN Thoracic Organ Transplantation Committee
Continuous Distribution of Lungs Workgroup
Meeting Summary
January 16, 2020
Conference Call

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Introduction

The Thoracic Committee's Continuous Distribution of Lungs Workgroup met via Citrix GoTo teleconference on 01/16/2020 to discuss the following agenda items:

1. Discussion of Lung Allocation Score (LAS) Cohort Update Project

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

1. Discussion of LAS Cohort Update Project

The Workgroup previously requested information about updating the LAS cohort as part of the Continuous Distribution of Lungs project. The Workgroup submitted a request for the Scientific Registry of Transplant Recipients (SRTR) to refit the models used to calculate LAS using an updated cohort of candidates.

SRTR presented updated waitlist mortality and post-transplant survival models for Workgroup consideration on December 5, 2019. Generally, refitting the model cohorts resulted in slightly decreased LAS values and slightly increased LAS rankings. SRTR found that the coefficients changed for four covariates in the waitlist mortality model, which means that these covariates had the opposite effect on LAS in the new model than in the current model. During Workgroup discussion, members also identified some missing or expired values that should be changed in updated models. The Workgroup requested more information to better understand these issues with the models and potential solutions, and started this discussion during a meeting on January 15, 2020. The focus of this call was to continue the discussion of the four covariates in question.

Summary of discussion:

Central Venous Pressure (CVP)

The Workgroup returned to their January 15th discussion of CVP. SRTR staff reiterated that since the coefficient on the CVP covariate flipped from positive to negative, an abnormal CVP increases LAS in the current model but decreases LAS in the new model. However, because the coefficient is almost zero, the impact on LAS is very small. SRTR staff recommended either removing the covariate or providing a different value to assign to missing data.

A Workgroup member suggested assigning a different value for missing data because removing the CVP covariate may cause concerns among the transplant community. However, another member noted that any data entered for CVP would still be driving the LAS in the wrong direction due to the coefficient change, even though the overall impact on LAS would be very small. Members noted that from a statistical standpoint, the CVP covariate should be removed from the model because it is not providing predictive value. To respond to concerns about the perception of eliminating CVP from the model, SRTR staff offered to provide additional data to demonstrate that the model accounts for heart failure

through covariates besides CVP. Workgroup members agreed that such information would be helpful in explaining their decision.

Given the concern that the sign change for the CVP coefficient would drive LAS in the wrong direction, Workgroup members agreed to go ahead and remove the CVP covariate from the model, prior to receiving the additional data requested from SRTR.

Forced Vital Capacity (FVC) Spline

The fourth covariate discussed was FVC Spline (Group D only). The FVC covariate changed from negative in the current model to positive in the new model, thereby driving LAS in the wrong direction relative to clinical evidence, though the impact is very small given the small magnitude of the coefficient.

One member pointed out that, with respect to the four covariates in question, the Workgroup has three options: 1) not to update the models at all; 2) eliminate the covariates since they no longer have predictive value and drive LAS in the wrong direction; or 3) conduct a comprehensive redo of the LAS and all the parameters that feed into it. Members agreed that not updating the model is unacceptable because the cohort is old and having updated data will be important for continuous distribution. Members also agreed that it is not currently feasible to reconsider the LAS in its entirety. Accordingly, members agreed to remove the FVC covariate as well as the CI covariate.

Generally, members expressed concern that removing covariates will cease data collection on these covariates. The Vice Chair noted that based on current OPTN policy, reporting FVC data will still be required even if it is removed from the model. SRTR staff noted that CI is still in the post-transplant survival model, so that data will still be collected as well.

Next Steps:

SRTR will rerun the model with all four covariates removed, as recommended by the Workgroup. The Workgroup will reconvene on February 13, 2020, to discuss changes to covariates in the post-transplant survival models.

Upcoming Meetings

- February 13, 2020
- February 20, 2020
- March 12, 2020