Adding clinical variables improves accuracy of lung allocation score

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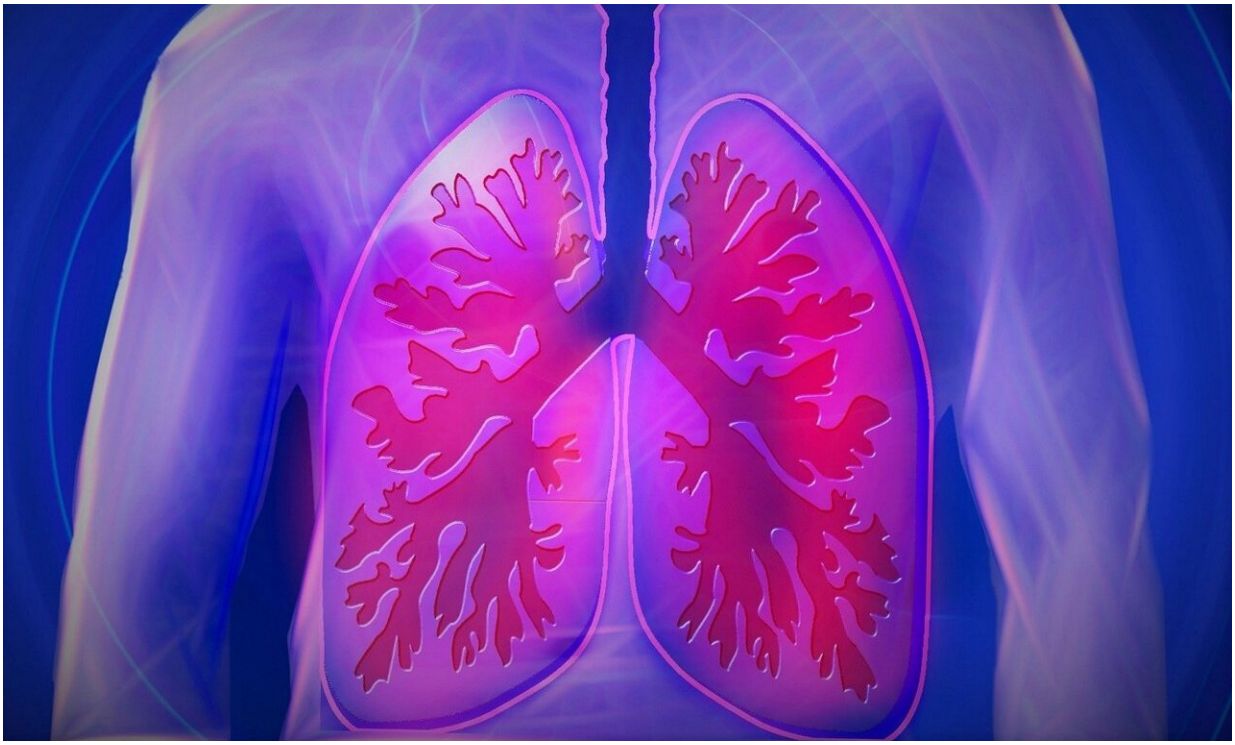

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Implemented back in 2005, the lung allocation score is used to prioritize patients awaiting lung transplants in the United States. Sicker transplant candidates have a higher calculated score and are placed at the top of the list. But a recent study led by Maryam Valapour, M.D., MPP, director of Lung Transplant Outcomes in Cleveland Clinic's Respiratory Institute,

found including new clinical variables helped to better identify the sickest cystic fibrosis and chronic obstructive pulmonary disease (COPD) patients awaiting transplants.

The paper was published June 14 in the *American Journal of Respiratory and Critical Care Medicine*.

Dr. Valapour, who is also the senior investigator for lung transplant for the U.S. Scientific Registry of Transplant Recipients (SRTR), worked on behalf of the U.S. Department of Health and Human Services. The Cystic Fibrosis Foundation (CFF) and Cleveland Clinic physicians Carli Lehr, M.D., MS and Elliott Dasenbrook, M.D., MHS, also collaborated on the study.

"Lung transplant is a life-saving procedure for patients with end-stage lung disease and these patients have no alternative treatment available to them if an organ doesn't become available in time," Dr. Valapour said.

The study merged patient data from the SRTR and the CFF Patient Registry from January 2011 to December 2014. It included 9,043 patients on the lung transplant waiting list and 6,100 lung transplant recipients. Once merged, cystic fibrosis-specific variables were added into the lung allocation score calculation.

People with cystic fibrosis differ from the average patient awaiting a lung transplant in several ways. "They are younger, often have more infections and multiple organs that are affected by their disease," Dr. Lehr said. "While many of these problems progress during a patients' life, they are not adequately factored into the lung allocation score."

This study marked the first time researchers could review a cystic fibrosis patient's entire clinical history. That's because the CFF registry captures all clinical data for almost all cystic fibrosis patients in this

country from birth onwards while the SRTR includes clinical data on all patients starting from when they are placed on the waiting list to transplant and beyond.

Results of the data merge not only showed improved accuracy of the lung allocation score for cystic fibrosis candidates, but the re-evaluation of the pulmonary function testing also helped patients with COPD.

"We believe the database we used more accurately identifies candidates likely to benefit the most from a transplant," Dr. Valapour said.

Today, more than 30,000 people are living with cystic fibrosis in the United States. Described as a progressive, genetic disease, cystic fibrosis causes persistent lung infections and limits the ability to breathe over time. The average life span for people with cystic fibrosis is about 37 years. Because almost all individuals with cystic fibrosis die of respiratory failure, lung transplant is a vital therapeutic option for patients with advanced lung disease.

More information: Carli J. Lehr et al. Effect of Including Important Clinical Variables on Accuracy of the Lung Allocation Score for Cystic Fibrosis and Chronic Obstructive Pulmonary Disease, *American Journal of Respiratory and Critical Care Medicine* (2019). DOI: 10.1164/rccm.201902-0252OC

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