

Clinical trial shows promise for increasing lung transplant patients' life expectancy

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A new study, presented today at the American Association for Thoracic Surgery's 99th Annual Meeting, shows that a potential treatment for ischemia- reperfusion injury is safe for humans. Building upon three decades of preclinical animal studies, this NIH-funded trial demonstrated, for the first time, the safety of Regadenoson (an adenosine 2A receptor agonist) in human lung transplant patients.

Ischemia-[reperfusion injury](#) is a major source of morbidity and mortality in [lung transplant](#) patients, and contributes to the less than optimal survival rates in lung transplant recipients. Adenosine 2AR agonists like Regadenoson offer a potentially novel treatment for this common inflammatory complication where none exists today. Researchers found no dose limiting toxicities in the non-randomized trial and no 30-day mortality.

The TCV lab at University of Virginia, under the direction of Dr. Irving Kron, has spent three decades studying the efficacy of A2AR agonists for lung transplant in rodents and large animals.

In humans, Regadenoson, (LexiscanTM), is clinically approved as a bolus for myocardial imaging, but its safety profile in the high risk lung transplant population as an infusion had not been established. This clinical trial was designed to assess the safety of regadenoson in human lung [transplant](#) recipients as a prequel to an efficacy trial.

"It is gratifying to see this research move from bench to bedside, with

decades of work culminating in a clinical trial," said Senior Author, Dr. Christine Lau, Professor of Surgery in the Division of Thoracic & Cardiovascular Surgery at the University of Virginia. "As the field of lung transplants evolves rapidly, we continue to see ischemia-reperfusion injury, making the potential of a new treatment an exciting development."

With safety established, the next step for testing efficacy is a multi-institutional, randomized trial. Additionally, because the treatment appears effective whether the drug is given to the donor lung or the recipient, future trials will use ex-vivo lung perfusion to administer the drug only to the donor lung, eliminating any risk to the patient.

Presenting author Dr. Joshua A. Boys, MD explained, "This treatment has the potential to be the next big thing in the world of [lung](#) transplants. With further study, this can quickly move from a quality of life improvement therapy to one that greatly improves survival for the long term."

More information: First in Human, Use of Regadenoson: An Adenosine 2A Receptor Agonist in Lung Transplant Recipients, Presented by Joshua A. Boys, MD, Sunday, May 5, 2019 at the AATS 99th Annual Meeting.

Provided by American Association for Thoracic Surgery

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