

Acid reflux surgery could help prevent rejection in lung transplant patients

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A Loyola University Medical Center study suggests that a procedure to treat acid reflux could help prevent chronic rejection in lung transplant patients.

The study also found that certain proteins found in lung fluid can help predict whether a patient's transplanted lung is more likely to fail.

Results are published in the July, 2013 issue of the *Journal of the American College of Surgeons*. Authors are P. Marco Fisichella, MD, FACS (first author), Christopher S. Davis, MD, MPH; Erin Lowery, MD, MS; Luis Ramirez, BS; Richard L. Gamelli, MD, FACS and Elizabeth J. Kovacs, PhD.

Lung transplant patients have the worst survivals of all solid [organ transplant recipients](#). A major reason is bronchiolitis obliterans syndrome (BOS), a condition in which [scar tissue](#) forms around small airways in the lungs. BOS results from [chronic rejection](#) of the transplanted lung, and affects about half of lung transplant patients within five years.

Following [lung transplantation](#), patients undergo a procedure every few months to inspect the airways. The procedure, called a [bronchoscopy](#), removes fluid from the lung.

Loyola researchers analysed various biomarkers taken from lung fluid during bronchoscopies. Researchers found that, in patients examined 6

to 12 months after transplant, concentrations of certain [biomarkers](#) could predict the likelihood of BOS 30 months after transplant. For example, patients with high concentrations of the biomarker myeloperoxidase and low concentrations of the biomarker α -1 antitrypsin were more likely to develop BOS.

The study also found that patients who aspirate (inhale fluid into the lungs) show evidence of a more active immune system. In a condition called [acid reflux](#), gastric contents back up from the stomach into the esophagus and can be inhaled into the lungs. The gastric contents irritate the lungs, triggering the immune system to ramp up and begin rejecting the transplanted lung. As evidence of this, patients who aspirate showed higher levels of neutrophils (a type of immune system white blood cell) and the immune system biomarker interleukin-8 (IL-8).

A minimally invasive procedure called laparoscopic anti-reflux surgery can treat acid reflux. The surgeon reinforces the valve between the esophagus and stomach by wrapping the upper portion of the stomach around the lowest portion of the esophagus. The 90-minute procedure requires five small incisions. Patients typically go home the next day, and take about one week to recover, Fisichella said.

Researchers wrote that their findings "justify the surgical prevention of aspiration and argue for the refinement of antirejection regimens."

Provided by Loyola University Health System

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