

# Study suggests need for renal protective care in pediatric lung transplant patients

May 17 2015

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Caucasian and Hispanic children who undergo lung transplantation appear to be at greater risk for developing chronic kidney disease, or CKD, according to a small retrospective study conducted at Texas Children's Hospital.

The study, believed to be the first to look at CKD in children who have received lung transplants, also found that those children with high levels of tacrolimus, a powerful immunosuppressant given to fight organ rejection, circulating in the blood and those who experience at least one episode of acute kidney injury during their recovery also appear to be at greater risk for CKD.

"These results show tendencies that need to be explored further," said lead investigator Maria Gazzaneo, MD, who will present her research at ATS 2015, May 15-20, in Denver. "Still, we believe these results suggest pediatric lung transplantation patients can benefit from renal protective strategies."

At Texas Children's Hospital, where Dr. Gazzaneo is assistant professor of pediatric critical care and [lung transplantation](#), the health care team now measures tacrolimus levels and [kidney](#) function twice a day. When possible, they try to reduce tacrolimus dosage, particularly in the first seven days post-surgery. The transplant team also involves nephrologists earlier in the care of any child who appears to be a risk for CKD.

Dr. Gazzaneo examined the medical records of 38 children who received

a [lung transplant](#) at her hospital between 2012 and 2014. Two were excluded because they died within two months of the surgery. Of the 36 others, 5, or 13.8%, developed CKD within one year of transplantation based on criteria established by an international clinical guideline, Kidney Disease: Improving Global Outcomes (KDIGO).

Three of the children with CKD were Caucasian and two were Hispanic. Tacrolimus levels were elevated (15 ng/ml or higher) during the first seven post-operative days in 80% of those who developed CKD. All patients who developed CKD had at least one episode of [acute kidney injury](#), or AKI. Among the [children](#) who did not develop CKD, the incidence of AKI was 71 percent.

Dr. Gazzaneo noted that CKD almost always presents a life-long challenge that can lead to many other complications, including hypertension, anemia, growth retardation and bone disease.

"The patients who developed CKD in our study were adolescents," she said. "If we could spare them this complication, it would greatly enhance their quality of life for the rest of their lives."

**More information:** Abstract 68152: Chronic Kidney Disease After Lung Transplantation: Incidence and Risk Factors in Pediatric Population: Retrospective Review

Provided by American Thoracic Society

Citation: Study suggests need for renal protective care in pediatric lung transplant patients (2015, May 17) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-05-renal-pediatric-lung-transplant-patients.html>

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