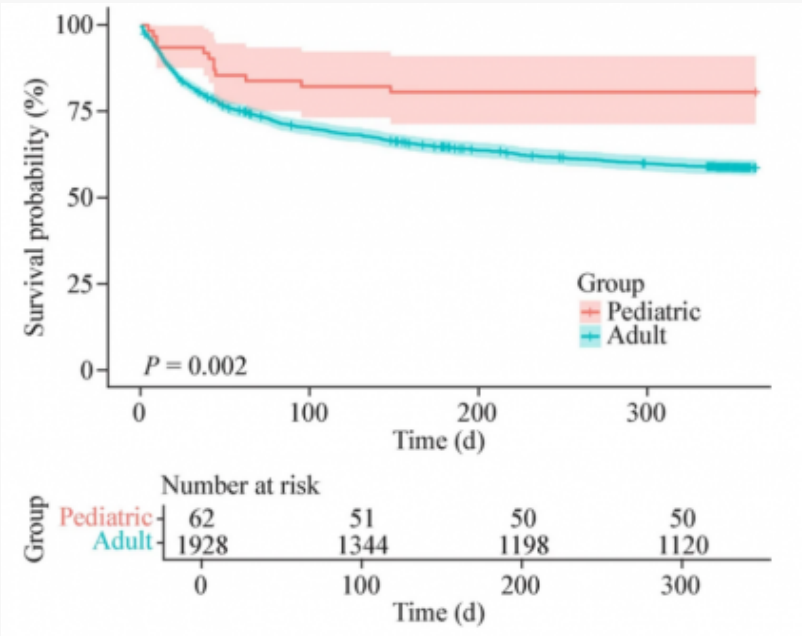
China’s first nationwide study reveals outcomes of pediatric lung transplants

FAYETTEVILLE, GA, UNITED STATES, October 4, 2025 /EINPresswire.com/ -- For children with severe lung diseases, transplantation can be the last hope for survival, yet its practice has remained extremely rare worldwide. A new nationwide study provides the first comprehensive analysis of pediatric lung transplantation in China between 2019 and 2023. Reviewing 62 young patients who received 63 transplants, researchers found that infections and complications were frequent, but early survival outcomes were highly encouraging. Nearly 94% of children survived the first month after surgery and more than 80% lived through the first year, surpassing adult patient outcomes. These findings demonstrate both the progress achieved and the urgent need to support long-term recovery in pediatric transplant care.



Comparison of one-year postoperative survival rates between pediatric and adult lung transplantation patients.

Lung transplantation has transformed care for patients with end-stage respiratory failure, particularly among adults, where the number of procedures has grown dramatically over recent decades. However, pediatric transplantation has advanced more slowly, limited by scarce donors, complex surgical challenges, and fragile postoperative recovery. Globally, fewer than 3,000 pediatric lung transplants have been reported in the past 30 years, highlighting the rarity of this procedure. In China, children account for fewer than 2% of all lung transplants. These barriers underscore a pressing need for research into pediatric-specific practices, risks, and outcomes. Based on these challenges, further in-depth studies are needed to improve clinical strategies and guide decision-making.

A research team from Wuxi People’s Hospital of Nanjing Medical University, The Second Affiliated Hospital of Zhejiang University School of Medicine, and other collaborating institutions has

conducted the first nationwide analysis of pediatric lung transplantation in China. Drawing on data from the China Lung Transplantation Registry, the retrospective study reviewed all cases performed between 2019 and 2023. The results, published online in the World Journal of Pediatrics on June 3, 2025 (DOI: 10.1007/s12519-025-00916-4), reveal critical insights into patient characteristics, surgical practices, complications, and survival outcomes, marking an important milestone in understanding the development of pediatric transplantation in China.

Between 2019 and 2023, 63 pediatric lung transplants were performed in 62 children aged 2–17 years across 13 hospitals in China. The most common indication was bronchiolitis obliterans syndrome (46%), followed by cystic fibrosis (12.7%) and idiopathic pulmonary arterial hypertension (11.1%). Nearly all patients underwent bilateral lung transplants, with extracorporeal membrane oxygenation (ECMO) used during surgery in 69.4% of cases and postoperatively in nearly half. Infections were the most frequent complication, affecting almost two-thirds of recipients, while younger children experienced slightly higher rates of bronchial anastomotic stenosis. Interestingly, hospitals performing more than 10 pediatric lung transplants during the study period—so-called high-volume centers—reported more infections and graft failure but fewer acute rejection cases, underscoring the complex interplay between institutional experience and patient outcomes. Despite these risks, survival rates were encouraging: in-hospital mortality stood at 16.1%, while 30-day and one-year survival reached 93.5% and 80.6%, respectively—significantly better than adult patients, whose one-year survival was only 58.7%. Causes of death included infection, graft failure, and multi-organ complications. The study demonstrates both the promise and the remaining challenges of pediatric transplantation in China.

“Performing lung transplants in children is among the most technically demanding surgeries in medicine, but it offers a lifeline for those with no other options,” said Dr. Jing-Yu Chen, senior author of the study. “Our data show that while pediatric transplantation remains rare, its practice in China is steadily growing and achieving outcomes that rival—and sometimes surpass—adult cases. The challenges of infection control, complication management, and long-term survival remain, but this study lays the foundation for new standards of care and future guidelines tailored to pediatric patients.”

This nationwide report provides compelling evidence that pediatric lung transplantation is feasible in China and delivers encouraging early survival rates. The concentration of surgeries in high-volume centers appears to bring certain advantages, but consistent improvements in donor allocation, infection prevention, and long-term follow-up are essential to sustain progress. Establishing pediatric-specific guidelines will be critical to standardizing candidate selection, perioperative management, and postoperative care. For families facing the devastating realities of childhood end-stage lung disease, these findings signal that transplantation is not only possible but increasingly promising, offering hope for better outcomes and improved quality of life in the years ahead.

References

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