Here we go again: Improving outcomes with pediatric lung retransplantation

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Left to right: Jason M. Gauthier, MD, Ruben G. Nava, MD, and Daniel Kreisel, MD, PhD.

Central Message

The University of Vienna's experience with pediatric lung transplantation may provide strategies that improve patient survival.

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Clinical data regarding pediatric lung transplantation are sparse, given that the procedure is seldomly performed even at most “high-volume” centers.¹ In this edition of the *Journal*, Waseda and colleagues² report excellent outcomes of 86 pediatric lung transplantation patients at the University of Vienna, a high-volume pediatric and adult lung transplant center. They demonstrate that outcomes have improved with time, with remarkable 5- and 10-year survivals of almost 75% for patients who received transplants after 2003. Waseda and colleagues² discuss strategies that may have contributed to improved outcomes. Of particular interest is their use of extracorporeal membrane oxygenation (ECMO) and their experience with retransplantation.

In the study of Waseda and colleagues,² the surgeons used intraoperative cardiopulmonary support in the vast majority of cases. Whereas our own center has reported the routine use of cardiopulmonary bypass in pediatric lung transplantation,³ the Vienna group used ECMO in virtually all cases performed in the recent past. Waseda and colleagues² discuss several advantages of ECMO that support this practice. Similar to their report in the adult population,⁴ one such advantage is the ability to transfer cardiopulmonary support into the postoperative period. It should be noted, however, that ECMO is not without drawbacks, such as potential challenges in managing intravascular volume, and at this time no randomized, controlled trials have been published examining ECMO versus cardiopulmonary bypass in the setting of lung transplantation.

Similar to recent reports in adults,⁵ elective lung retransplantation for chronic allograft dysfunction yielded excellent results, with survivals at least comparable to those of primary transplantation; in fact, these outstanding retransplantation results were primary responsible for the

increase in overall patient survival during the second era. Conversely, outcomes after acute retransplantation for primary graft dysfunction were dismal, a finding that is also corroborated by studies in the adult population.⁶ This realization led Waseda and colleagues² to abandon acute retransplantation. Acknowledging the shortage of donor organs, these findings further reinforce the notion that retransplantation should only be offered to patients for whom long-term survival is anticipated.⁷ In this context, a recent study has shown that lung retransplantation in older adults is associated with poor outcomes.⁸ Considering the complexity of lung retransplantation, particularly in children, such a procedure should only be performed at high-volume centers. In conclusion, the study of Waseda and colleagues² from the University of Vienna is an excellent contribution to the lung transplantation literature, highlighting that the development of practice patterns by high-volume centers can lead to improved patient survival.

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