

## **Heart & Lung III - Lung**

### **Living donor lung transplantation**

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Looking back the last quarter century of clinical lung transplantation in Japan, living donor lung transplantation played a major role for the first 15 years because of severe donor shortage. It accounted for approximately half of all lung-transplant cases in Japan from 1998, when the first successful living donor lung transplantation was conducted in Okayama University, to 2012. However, after Organ Transplant law was revised in 2011, the number of deceased-donor lung transplantation has been increasing gradually. In 2022, the total number of lung transplantation conducted across Japan reached 100 cases a year for the first time. Out of the 108 cases, only 14 cases (13%) were living-donor lung transplantation.

In general, living-donor lung transplantation is technically more demanding and perioperative management is more challenging due to the small graft or severe donor-recipient size mismatch. Also, the ethical issue regarding the use of living donor lungs is not minor. Thus, the increase in cadaveric donor and the relative reduction of the role of living donor lung transplantation is generally ideal. Conversely, it is also true that high technical demand of the specialized surgery has trained Japanese lung-transplant surgeons and enhanced the experience of lung transplant teams in Japan. Through the process, specialized procedures have been established such as right-left inversed lobar transplantation and recipients' lung-sparing lobar transplantation. Moreover, even in the new era of lung transplantation in Japan, some selected urgent patients who cannot await cadaveric donor organs (e.g., those already on ECMO; the allocation system in Japan does not consider urgency into account) need living donor lung transplantation. It is our important task to hand down the techniques of the high-demand procedure and strategies of challenging perioperative management to the next generation.