

## LETTER TO THE EDITORS

**Sizing considerations in lobar lung transplantation**

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Dear editors of Transplantation International,

It was with great interest that we read the article by Slama *et al.* [1], published recently in the journal. We commend the authors on their work. The optimal donor to recipient size matching threshold to warrant a lobar lung transplant is not well defined.

In their article, Slama *et al.* indicate that they find a difference in total lung capacity >20% often requires a lobar transplant, whereas differences up to 20% can usually be dealt with by wedge resection. We inquire whether this estimation of size difference incorporated predicted total lung capacity (pTLC), as the donor to recipient pTLC-ratio. The difference in pTLC attributable to gender alone would account for nearly a 20% difference [2] and would indicate that a majority of female recipients are likely to undergo some form of reduction. If this is the case, an improvement to the system of organ size matching that incorporates pTLC into the match run might improve outcomes. We have previously shown that donor organs that are undersized by pTLC estimates are associated with worse post-transplant survival [3–6]. We have also shown that transplants from relatively oversized donors are associated with lower healthcare costs [7].

While it is evident that the lobar lung transplant group has different clinical characteristics compared with the conventional lung transplant group, it remains an open question, whether pTLC differences between the transplanted lobes and the recipient account for some of the early mortality associated with lobar lung transplantation. This is specifically a possible concern, if a very undersized situation occurs via a lobar transplant.

We have previously shown that undersizing is associated with increased rates of bronchiolitis obliterans syndrome (BOS) [8]. The long-term outcomes after lobar lung transplantation and the occurrence of BOS in comparison with conventional lung transplantation are not yet well defined and deserve investigation. In conclusion, we want to thank and congratulate Slama *et al.* on their important study on lobar lung transplants, which is a potentially lifesaving surgical option for recipient with small chest cavities, who otherwise might not have the time to wait for appropriately

sized donor lungs. Defining the risks/benefits of transplanting whole donor lungs in comparison with the risks/benefits of a lobar transplant will require a systematic, uniform approach to the size matching decision. In our opinion, the pTLC-ratio has the strongest evidence base to be used as a size matching parameter and future studies are indicated to better define diagnosis-specific pTLC-ratio thresholds informing when a lobar transplant has a more favorable risk/benefit profile compared with a transplant of the whole donor lungs.

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**Conflicts of interest**

No author involved in this work reports any conflict of interest, either real or perceived.

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