

Submission No.: LW-5438

Session : Lung Workshop

Date & Time, Place : November 19 (Sat), 08:30-10:00, Room 6F-2

Session Title : Preoperative evaluation & work up

Donor selection

Ha Eun Kim

Severance Hospital, Yonsei University, Republic of Korea

Donor selection Optimal selection and care of donor lungs for transplantation are needed to increase the availability of donor lungs and achieve the full potential of limited donor pools. 1) Ideal donor criteria

Age < 55 years	Absence of significant chest trauma
ABO compatibility	No evidence of aspiration/sepsis
Clear chest radiograph	No prior cardiopulmonary surgery
PaO ₂ >300 on FiO ₂ = 1.0, PEEP 5 cm H ₂ O	Acceptable FOB findings
Smoking history < 20 pack*years	Negative Gram staining of sputum/BAL
No history of significant chronic lung disease	

2) Advanced donor age - The upper limit age based on the belief of increasing prevalence of comorbid conditions as age increases - However, several studies demonstrated no significantly worse survival between recipients of lungs from young versus old donors - Understanding of physiologic changes in aged organs, especially the decreasing compliances 3) Size matching - Matching of the size of a donor lung with a recipient is usually based on donor and recipient heights, estimation of lung volume made from chest radiographs - Oversized donor lungs - Undersized donor lungs - Effect of donor lung resection on graft function, survival 4) Smoking history - Potential for adverse effects on post-transplant lung function and the transmission of cancer - Positive smoking history affects the worse post-transplant survival compared to non-smoking history - The analysis of the UNOS database suggested the cut-off value of heavy-smoking donors 5) Infection - Certain kinds of transmission of infection from the donor to recipient are a significant risk factor for post-transplant survival - Bacterial / mycobacterial infections: if treated adequately, the bacterial infection did not affect post-transplant survival. However, multidrug-resistant

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organisms and fungal infections need attention. - Hepatitis B, Hepatitis C - CMV - Respiratory viruses (especially COVID-19) 6) Immunologic considerations - ABO compatibility: ABO-compatible donors were not associated with worse survival, but a potential concern related to the ABO-compatible lungs is the cause of leukocyte syndrome remains. - HLA compatibility: Elevated HLA-specific antibodies may predict poor outcomes, however, some centers describe successful lung transplantation despite positive cross-match. Cut-off levels for the acceptance and the optimal methods for the detection have not been determined yet. 7) Considerations during procurement - Visual inspection of the lungs, including an evaluation of color, inflation, scarring, signs of infection, atelectasis, consolidation, nodules, tumors, bullae, blebs, and adhesions. - Peak and plateau inspiratory pressures - Recruitment with maximal inflation and discontinuation of the ventilation for assessment of elastic recoil (lung compliance)