

## **ABSTRACT**

**Background:** Optimal management of early airway infection is one of the keys for lung transplant (LTx) recipients to survive the first 12 months after transplantation. This study aimed to explore the main cause of post-lung transplant pneumonia (PLTP) within 30 days after LTx.

**Methods:** Forty LTxs were retrospectively analyzed. Sputum sampling from donors' and recipients' airways was performed pretransplant and posttransplant daily for the first 30 days after LTx. Organisms in recipient's and donor's original airways were compared to pathogens responsible to PLTP. Patients with and without PLTP were also compared to identify relevant risk factors.

**Results:** Seventeen (42.5%) patients developed pneumonia (PLTP group) and 23 had no episode of pneumonia (Non-PLTP group) during the first 30 days. Donor smoking history was an independent risk factor of PLTP in the univariate and multivariate analyses. In the PLTP group, median time from LTx to PLTP onset was 6 days. Significantly higher incidence of PLTP was caused by recipient's than donor's original airway bacteria (81% vs 13%,  $p<0.01$ ). Smoking history of the donor and pretransplant airway bacterial colonization of the recipient were independent risk factors of PLTP which was associated with prolonged posttransplant mechanical ventilation with longer intensive care unit stay and worse survival outcomes.

**Conclusions:** The recipient's original airway microflora rather than the donor's, was highly associated with PLTP. A combination of donor smoking history and recipient airway infection should be avoided, while evidence of donor lung infection is not a contraindication for LTx.