Sleep-disordered breathing after lung transplantation: an observational cohort study

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Objectives. Data concerning sleep-disordered breathing (SDB) after lung transplantation (LTX) are scarce but show a high prevalence of this disorder. Most of these studies included a limited number of patients and did not prospectively assess patients at a fixed time interval after LTX. This study aims to analyze the prevalence, associated factors and impact on survival of moderate to severe SDB in a large cohort of consecutive LTX patients.

Methods. All consecutive patients undergoing LTX between February 2013 and March 2017 (n=269) were evaluated. Finally 219 patients were included in the study and underwent a diagnostic polysomnography (PSG) 1 year after LTX. 45 of these patients also underwent PSG before transplantation. Patients requiring oxygen supplementation were excluded.

Results. Moderate to severe SDB (defined as an apnea/hypopnea index (AHI) ≥15/hour of sleep) was present in 57.5% of patients, with the highest prevalence in COPD/emphysema (71.1%) and pulmonary fibrosis (65.1%). SDB patients were older, mostly male and had a higher BMI and neck circumference. Nocturnal diastolic and 24-hour blood pressures were higher in SDB patients. In 45 patients, polysomnography was also performed pre-LTX. Compared to pre-LTX, mean apnea/hypopnea index (AHI) increased significantly after LTX. Presence of SDB had no impact on mortality or prevalence of chronic lung allograft dysfunction. However, survival was better in CPAP compliant SDB patients compared to SDB patients without CPAP treatment.

Conclusion. This is the largest prospective study to date to analyze prevalence and associated factors of moderate to severe SDB in patients after LTX. The prevalence of SDB one year after LTX is high, especially in patients with a pre-transplant diagnosis of COPD/emphysema or pulmonary fibrosis. SDB patients had higher 24h BP and survival was better in SDB patients with a good adherence to CPAP. These findings suggest a role for systematic screening for SDB after LTX.