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# Pneumonia *versus* graft dysfunction as the cause of acute respiratory failure after lung transplant: a 4-year multicentre prospective study in 153 adults requiring intensive care admission

Cristopher Mazo<sup>1,2,3,4</sup>, Teresa Pont<sup>1,2,3</sup>, Maria A. Ballesteros<sup>5</sup>, Eloísa López<sup>6</sup>, Luzdivina Rellán<sup>7</sup>, Juan C. Robles<sup>8</sup> and Jordi Rello<sup>2,3</sup>

**Affiliations:** <sup>1</sup>Transplant Procurement Dept, Vall d'Hebron University Hospital, Barcelona, Spain. <sup>2</sup>Vall d'Hebron Research Institute, Barcelona, Spain. <sup>3</sup>CIBERES, Instituto de Salud Carlos III, Madrid, Spain. <sup>4</sup>Dept of Medicine, Universitat Autònoma de Barcelona, Barcelona, Spain. <sup>5</sup>Intensive Care Medicine Dept, Marqués de Valdecilla University Hospital, Santander, Spain. <sup>6</sup>Intensive Care Medicine Dept, 12 de Octubre University Hospital, Madrid, Spain. <sup>7</sup>Intensive Care Medicine Dept, A Coruña University Hospital, A Coruña, Spain. <sup>8</sup>Intensive Care Medicine Dept, Reina Sofia University Hospital, Córdoba, Spain.

**Correspondence:** Cristopher Mazo, Transplant Procurement Dept, Vall d'Hebron University Hospital, Passeig de la Vall d'Hebron 119–129, Edificio Materno-Infantil 11ª Planta, 08035 Barcelona, Spain. E-mail: cmazo@vhebron.net



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**In lung transplant adults, pneumonia causes most ICU readmissions and independently influences risk of death, as chronic lung allograft dysfunction also does, particularly the restrictive phenotype. However, acute allograft dysfunction is far less common** <http://bit.ly/2Xvity5>

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**ABSTRACT** We aimed to assess the main causes of intensive care unit (ICU) readmissions in lung transplant adults and to identify independent predictors of ICU mortality (primary end-point).

This Spanish five-centre prospective cohort study enrolled all lung transplant adults with ICU readmissions after post-transplant ICU discharge between 2012 and 2016. Patients were followed until hospital discharge or death.

153 lung transplant recipients presented 174 ICU readmissions at a median (interquartile range) of 6 (2–25) months post-transplant. Chronic lung allograft dysfunction was reported in 39 (25.5%) recipients, 13 of whom (all exitus) had restrictive allograft syndrome (RAS). Acute respiratory failure (ARF) (110 (71.9%)) was the main condition requiring ICU readmission. Graft rejection (six (5.4%) acute) caused only 12 (10.8%) readmissions whereas pneumonia (56 (36.6%)) was the main cause (50 admitted for ARF and six for shock), with *Pseudomonas aeruginosa* (50% multidrug resistant) being the predominant pathogen. 55 (35.9%) and 69 (45.1%) recipients died in the ICU and the hospital, respectively. Bronchiolitis obliterans syndrome (BOS) stage 2 (adjusted OR (aOR) 7.2 (95% CI 1.0–65.7)), BOS stage 3 (aOR 13.7 (95% CI 2.5–95.3)), RAS (aOR >50) and pneumonia at ICU readmission (aOR 2.5 (95% CI 1.0–7.1)) were identified in multivariate analyses as independent predictors of ICU mortality. Only eight (5.2%) patients had positive donor-specific antibodies prior to ICU readmission and this variable did not affect the model.

ARF was the main condition requiring ICU readmission in lung transplant recipients and was associated with high mortality. Pneumonia was the main cause of death and was also an independent predictor. RAS should receive palliative care rather than ICU admission.