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Successful *Pseudomonas aeruginosa* eradication improves outcomes after lung transplantation: a retrospective cohort analysis

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Presence of *P. aeruginosa* in respiratory samples after lung transplantation is associated with worse outcomes. Successful eradication improves outcomes and pulmonary function. Therefore, early treatment of *P. aeruginosa* should be pursued. <https://bit.ly/2XuDPG2>

Cite this article as: De Muynck B, Van Herck A, Sacreas A, *et al.* Successful *Pseudomonas aeruginosa* eradication improves outcomes after lung transplantation: a retrospective cohort analysis. *Eur Respir J* 2020; 56: 2001720 [https://doi.org/10.1183/13993003.01720-2020].

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ABSTRACT Long-term survival after lung transplantation (LTx) is hampered by development of chronic lung allograft dysfunction (CLAD). *Pseudomonas aeruginosa* is an established risk factor for CLAD. Therefore, we investigated the effect of *P. aeruginosa* eradication on CLAD-free and graft survival.

Patients who underwent first LTx between July, 1991, and February, 2016, and were free from CLAD, were retrospectively classified according to *P. aeruginosa* presence in respiratory samples between September, 2011, and September, 2016. *P. aeruginosa*-positive patients were subsequently stratified according to success of *P. aeruginosa* eradication following targeted antibiotic treatment. CLAD-free and graft survival were compared between *P. aeruginosa*-positive and *P. aeruginosa*-negative patients; and between patients with or without successful *P. aeruginosa* eradication. In addition, pulmonary function was assessed during the first year following *P. aeruginosa* isolation in both groups.

CLAD-free survival of *P. aeruginosa*-negative patients (n=443) was longer compared with *P. aeruginosa*-positive patients (n=95) (p=0.045). Graft survival of *P. aeruginosa*-negative patients (n=443, 82%) was better compared with *P. aeruginosa*-positive patients (n=95, 18%) (p<0.0001). Similarly, *P. aeruginosa*-eradicated patients demonstrated longer CLAD-free and graft survival compared with patients with persistent *P. aeruginosa*. Pulmonary function was higher in successfully *P. aeruginosa*-eradicated patients compared with unsuccessfully eradicated patients (p=0.035).

P. aeruginosa eradication after LTx improves CLAD-free and graft survival and maintains pulmonary function. Therefore, early *P. aeruginosa* detection and eradication should be pursued.