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Late-onset “acute fibrinous and organising pneumonia” impairs long-term lung allograft function and survival

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This study links acute fibrinous and organising pneumonia with poor outcome after lung transplantation. These findings indicate that acute fibrinous and organising pneumonia plays a role in the pathogenesis of restrictive allograft syndrome. <https://bit.ly/3aof9n9>

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ABSTRACT Acute fibrinous and organising pneumonia (AFOP) after lung transplantation is associated with a rapid decline in pulmonary function. However, the relation with chronic lung allograft dysfunction (CLAD) remains unclear. We investigated the association between detection of AFOP in lung allograft biopsies with clinically important endpoints.

We reviewed lung allograft biopsies from 468 patients who underwent lung transplantation at the University Hospitals Leuven (2011–2017). AFOP was categorised as early new-onset (≤ 90 days post-transplant) or late new-onset (> 90 days post-transplant); and associated with CLAD-free survival, graft survival, donor-specific antibodies, airway and blood eosinophilia.

Early and late AFOP was detected in 24 (5%) and 30 (6%) patients, respectively. CLAD-free survival was significantly lower in patients with late AFOP (median survival 2.42 years; $p < 0.0001$) compared with patients with early or without AFOP and specifically associated with development of restrictive allograft syndrome (OR 28.57, 95% CI 11.34–67.88; $p < 0.0001$). Similarly, graft survival was significantly lower in patients with late AFOP (median survival 4.39 years; $p < 0.0001$) compared with patients with early AFOP or without AFOP. Late AFOP was furthermore associated with detection of circulating donor-specific antibodies (OR 4.75, 95% CI 2.17–10.60; $p = 0.0004$) compared with patients with early or without AFOP, and elevated airway and blood eosinophilia ($p = 0.043$ and $p = 0.045$, respectively) compared with early AFOP patients.

Late new-onset AFOP is associated with a worse prognosis and high risk of CLAD development, specifically restrictive allograft syndrome. Our findings indicate that late new-onset AFOP might play a role in the early pathogenesis of restrictive allograft syndrome.