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Journal club

Endobronchial valves for advanced emphysema

In this multicentre randomised trial from USA, the safety and efficacy of unilobar endobronchial valve therapy in patients with heterogeneous emphysema was compared with usual care.

In terms of effectiveness, the co-primary outcomes were percentage change in FEV₁ and distance on the 6 min walk test. In terms of safety, the primary outcome was the difference in complication rate, using a composite of six major complications including death, empyema, massive haemoptysis, pneumonia distal to the valves and pneumothorax or air leak of more than 7 days duration.

Patients with endobronchial valves showed modest improvements in FEV₁ and 6 min walk test distance, but at the cost of more pneumonia, including episodes requiring hospitalisation, chronic obstructive pulmonary disease exacerbations and haemoptysis. Follow-up was for 12 months with most complications occurring in the 6 months after valve insertion. There were also modest improvements in secondary end points including quality of life, dyspnoea and supplemental oxygen use.

Of note, there were substantial missing data for the primary efficacy end points, but similar rates were observed in control and intervention groups. There was a higher drop out rate in the control group. It was noted that patients in the high heterogeneity subgroup had greater improvements in FEV₁ and distance on the 6 min walk test. The study was not powered to compare subgroups but this suggests that, similar to lung volume reduction surgery, appropriate patient selection is key to good outcomes.

Therapeutic interventions for advanced emphysema are limited. The role of endobronchial valve therapy remains unclear. There are no direct comparisons with lung volume reduction surgery, but benefits are likely to include lower complication rates, and perhaps mortality. Careful patient selection using expert analysis of high-resolution CT is vital and likely to be an area of future research.

► **Sciurba FC**, Ernst A, Herth FJF, *et al*. A randomized study of endobronchial valves for advanced emphysema. *N Engl J Med* 2010;**363**:1233–44.

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