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Bronchoalveolar lavage-directed therapy does not affect prevalence of *Pseudomonas aeruginosa* infection and structural lung injury in children with cystic fibrosis

Early *Pseudomonas aeruginosa* pulmonary infections lead to increased morbidity and mortality in children with cystic fibrosis (CF). As this diagnosis is difficult to ascertain in the non-expectorating patient, the authors set out to determine if bronchoalveolar lavage (BAL)-directed therapy during the first 5 years of life leads to better outcomes than standard practice (which is therapy based on clinical features and oropharyngeal cultures).

This multicentre, randomised, parallel-group trial recruited patients between 1999 and 2005 from eight CF centres in Australia and New Zealand. Of 267 eligible infants, 36% were excluded. Patients were randomly assigned in a 1:1 ratio to receive either BAL-directed or standard therapy.

Primary outcomes at 5 years were prevalence of *P aeruginosa* on BAL cultures and total CF-CT score, a measure of pulmonary structural damage. Secondary outcomes were z scores for weight, height and body mass index, pulmonary function parameters, CF-CT score components, exacerbation rate, number and duration of hospitalisations for non-*P aeruginosa* pulmonary infections, number of episodes of *P aeruginosa* infection per child-year and final BAL microbiology and inflammatory indices.

This study did not find any statistically significant differences between groups for any primary or secondary outcomes, except for a reduced length of hospital stay for non-*P aeruginosa* respiratory-related admissions in the BAL-directed therapy group. While this may help determine clinical management, it is essential to note that the study was not powered for secondary outcomes, and CF-CT scores have yet to be validated as a clinical outcome measure.

► **Wainwright CE**, Vidmar S, Armstrong DS, *et al*; ACFBAL Study Investigators. Effect of bronchoalveolar lavage-directed therapy on *Pseudomonas aeruginosa* infection and structural lung injury in children with cystic fibrosis: a randomized trial. *JAMA* 2011;**306**:163–71.

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