Cystic Fibrosis Research News

Title:

Clinical characteristics of *Pseudomonas* and *Aspergillus* co-infected cystic fibrosis patients: a UK registry study

Lay Title:

How does infection with *Pseudomonas* and *Aspergillus* affect people with cystic fibrosis? A study using UK registry data.

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What was your research question?

We wanted to know if there is any evidence that *Aspergillus* infection, either alone or alongside *Pseudomonas*, is linked with a worsening of disease in people with CF in the UK registry.

Why is this important?

The number of people with CF who are infected with *Aspergillus*, the most common fungal infection found in CF lungs, appears to be rising. Previous studies had shown that *Aspergillus* infection was linked to reduced lung function, but with no additional effect if there was also longstanding *Pseudomonas* infection. Having a better understanding of the true impact of lung infections can help to guide decisions about ways of testing patients and the treatment they receive.

What did you do?

We studied the UK registry data of 9,270 patients, and grouped them depending on whether they have *Pseudomonas*, *Aspergillus*, both or neither infection. These groups were compared for important measures of CF disease: lung function, need for intravenous (IV) antibiotics,

measures of growth (height, weight, body-mass index (BMI)), and other disease complications such as CF-related diabetes.

What did you find?

We found that people with CF who had *Aspergillus* lung infections: had reduced lung function, needed more IV antibiotics, had poorer growth (BMI), and experienced more complications (CF-related diabetes, liver disease and allergic bronchopulmonary aspergillosis (ABPA)) compared to those with neither infection. When a patient has long-term *Pseudomonas* infection, we found no additional effect of *Aspergillus* on lung function, but patients needed more IV antibiotics.

What does this mean and reasons for caution?

This study suggests that *Aspergillus* infection alone is significantly detrimental to the health of people with CF, adding to the growing evidence on the impact of fungal infections in the CF lungs. *Aspergillus* even appears to have an additional impact on symptoms and requirement for treatment in those patients with long-standing *Pseudomonas* infection. We should be cautious about these findings as we identify an *association* between infection and increased severity of disease, but cannot identify the *cause* of this link.

What's next?

Aspergillus lung infections are being increasingly seen as problematic rather than innocent bystanders. We need to improve methods of detecting infections of all types in airway samples, including this important and difficult to identify fungus, and continue to investigate the effects of infections that are likely to persist despite highly effective modulator therapies.

Original manuscript citation in PubMed

J Cyst Fibros. 2021 May 3;S1569-1993(21)00117-X. doi: 10.1016/j.jcf.2021.04.007.