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Cystic Fibrosis Research News

Title:
Association between elevated peripheral blood eosinophil count and respiratory outcomes in adults with cystic fibrosis

Lay Title:
High blood eosinophil counts are linked with worse symptoms in adults with cystic fibrosis

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What was your research question?
Increases in the number of eosinophils (a type of disease-fighting white blood cell) in the blood have been linked to worse outcomes in other respiratory diseases like chronic obstructive pulmonary disease (COPD) and asthma. We wanted to know if high blood eosinophil count in cystic fibrosis is associated with any of the following: worse lung function, more exacerbations/flare-ups, or worse symptoms.

Why is this important?
If high eosinophil counts are associated with more severe cystic fibrosis lung disease, measuring eosinophil count may represent a readily available method to identify these higher risk individuals. We may be able to better treat those with high eosinophil counts by using more steroids or other therapies that specifically target eosinophils.

What did you do?
We examined eosinophil counts in blood collected from 109 adults with cystic fibrosis during clinic visits when they were well. These adults were divided into a group with high eosinophil

counts and a group with low eosinophil counts. We then looked at the symptoms they reported at these clinic visits, how many exacerbations they would develop in the next year, and their lung function over the next 1-3 years to see which group did worse.

What did you find?

We found that those with high eosinophil counts have worse symptoms, including more difficulty breathing, feeling tired, chills or sweats, and wheezing than those with low eosinophil counts. There was no relationship between high eosinophil count and a faster lung function decline or more exacerbations compared to those with low eosinophil counts.

What does this mean and reasons for caution?

One explanation for why people with cystic fibrosis with high eosinophil counts had worse symptoms could be that some of these individuals may also have asthma or allergic lung disease related to a fungus called *Aspergillus*. Both conditions are challenging to diagnose in people with cystic fibrosis, with eosinophil count being a potential clue to identifying and treating them. Our study represents a first look into the relationship between eosinophil count and outcomes in cystic fibrosis. These initial results are only based on patients from our clinic and therefore should be studied further in other CF clinics.

What's next?

More research is needed to confirm the link between high eosinophil counts and worse symptoms in people with cystic fibrosis. If our results are confirmed, it will be interesting to see if those with high eosinophil counts may potentially benefit more from treatments targeting eosinophil activity, such as inhaled corticosteroids.

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