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Cystic Fibrosis Research News

Title:
Inflammation biomarkers in sputum for clinical trials in cystic fibrosis: current understanding and gaps in knowledge.

Lay Title:
What do we already know and what do we need to study next when looking at markers of inflammation in sputum in CF trials?

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What was your research question?

What do we know about measuring CF lung inflammation using sputum? We can use sputum biomarkers. Biomarkers are characteristics of the body that we can measure. We wanted to look at the research in this area so far and find out what else we need to do to improve future research.

Why is this important?

In CF research, we want to understand better, how inflammation affects the lungs. Sputum biomarkers can give us more information about what is happening in the lungs in a measurable way. Giving us this picture of what is happening in the lungs of people with CF allows us to compare this to the lungs of people without CF or people with other breathing conditions like asthma or bronchiectasis.

What did you do?

We reviewed all of the available medical literature looking at sputum biomarkers used in CF clinical trials to try to identify the most useful biomarkers to measure inflammation in the lungs and the possible impact of treatments.

What did you find?

Several sputum biomarkers show promise measuring CF lung inflammation; these include ones called neutrophil elastase, interlekin-8, tumour necrosis factor alpha and interleukin-1-beta. Other sputum biomarkers are also useful and need further study. They can help make future clinical trials in CF better, working together to improve our research.

What does this mean and reasons for caution?

Of the 71 biomarkers identified, several showed that they were useful in clinical trials when looking at inflammation; we also compared them with other biomarkers and looked at how they changed with treatment. However, others sputum biomarkers are also promising and should be studied in more detail.

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What's next?

We need a joint international effort across the CF community to improve trial design and create shared standards for collection, storage and analysis of sputum biomarkers.

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