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Cystic Fibrosis Research News

Title:

CHARACTERIZING CFTR MODULATED SWEAT CHLORIDE RESPONSE ACROSS THE CF POPULATION: INITIAL RESULTS FROM THE CHEC-SC STUDY

Lay Title:

A Study Characterizing Sweat Chloride after CFTR Modulators in People with Cystic Fibrosis

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What was your research question?

We wanted to know how the amount of chloride in the sweat of people with CF changed after they started taking CFTR modulators and whether the changes we saw in the amount of chloride in sweat was different among people with different CF mutations, sexes or ages.

Why is this important?

One of the ways we know someone has CF is that they have large amounts of chloride in their sweat. Many people with CF taking CFTR modulators feel better, have better lung function, and the amount of chloride in their sweat drops, sometimes so much we can't tell they have CF anymore. Measuring feeling and function is hard and takes many more people than measuring chloride in sweat. If we could understand how the amount of sweat chloride in someone's sweat relates to how they feel or function, it would be easier to predict how well a new modulator works.

What did you do?

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We collected sweat from thousands of people with CF taking different CFTR modulators and measured the amount of chloride in each sample and compared this to the amount of chloride in people's sweat before taking modulators. Differences in the amount of chloride in sweat were described for different types of people, including by the modulator they were taking, the CFTR mutations they had, their ages, and their sexes at birth.

What did you find?

Changes in the amounts of chloride in sweat that we saw when people started taking CFTR modulators were very similar to what had been seen before in modulator clinical trials. Many people had amounts of chloride in sweat after taking modulators that were below the amount that is used to tell if someone has CF. The type of modulator someone was taking had a big effect on how much change in sweat chloride we saw, but a person's sex at birth did not.

What does this mean and reasons for caution?

The people in our study are being followed in the US CF Patient Registry and we will be able to follow their health for years to come. Sweat chloride changes we saw were like those from earlier clinical trials and we can study how the amount of chloride remaining in someone's sweat taking modulators relates to how their health changes in the future with measures such as lung function. We need to be cautious because some people in our study may stop taking modulators regularly, which might change the amount of chloride in their sweat and make results harder to understand.

What's next?

This was a report on how our study is proceeding. We continue to enrol new people with CF starting modulators and measuring their sweat chloride. Later, we will study how changes in their health over years related to the amount of chloride that was in their sweat.
This interim report of study data from CHEC-SC was necessary to confirm that population level changes in sweat chloride reflected those from published clinical trials. The study is continuing to collect sweat chloride among those on elexacaftor/tezacaftor/ivacaftor. Once this data is complete, a comprehensive analysis will be done to examine associations between sweat chloride and clinical outcomes.

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