

Cystic Fibrosis Research News

Title:

Heterogeneity of CFTR modulator-induced sweat chloride concentrations in people with cystic fibrosis

Lay Title:

Amount of chloride in the sweat of people with CF taking CFTR modulators

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What was your research question?

People with CF have extra salt (chloride) in their sweat because the CFTR protein does not work well. CFTR modulators help the CFTR protein and reduce salt in sweat. We wanted to know how many people still have high amounts of salt in their sweat when taking modulators.

Why is this important?

CFTR modulators help CFTR protein move salt in the body. Many people with CF feel better and have better lung function when taking modulators, but other people do not respond as well. Measuring the amount of salt in sweat is one way to tell how well the CFTR protein is working and might show how well someone is responding to a modulator. People with more salt in their sweat when taking a modulator might benefit from other treatments.

What did you do?

We collected sweat from over 3,000 people with CF who had been taking a CFTR modulator and measured how much salt was in their sweat. Some people enrolled in the study a second or third time after they changed to a different modulator. We compared how much salt was in people's sweat with which modulator they were taking. For people taking elexacaftor-



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tezacaftor-ivacaftor (ETI), we also studied if the amount of salt in their sweat was related to which CF mutations they carried.

What did you find?

The amount of salt in sweat varied a lot, even in people with CF taking the same modulator. Some people had very low amounts of salt in their sweat, similar to people without CF, while others had as much salt in their sweat as people with CF not taking modulators. Most people had amounts of salt in their sweat between these two groups. On average, the amount of salt in sweat was lowest for people taking ETI. However, 1 in 5 people taking ETI had high amounts of salt in sweat.

What does this mean and reasons for caution?

Measuring the amount of salt in sweat is a good way to tell how well the CFTR protein is working. People who are taking a modulator but still have high amounts of salt in their sweat might benefit from other treatments in the future. It is also possible that the amounts of sweat in some people are higher for other reasons, and that modulators are doing their job. For example, some people feel better after starting to take a modulator even when the amount of salt in their sweat stays high.

What's next?

We want to see if how much salt is in sweat tells us how well a modulator is working. We will compare the health of people with CF on modulators for a long time with how much salt had stayed in their sweat after starting the modulator.

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