

Cystic Fibrosis Research News

Title:

Longitudinal effects of Elexacaftor/Tezacaftor/Ivacaftor on the oropharyngeal metagenome in adolescents with cystic fibrosis

Lay Title:

How a new CF treatment affects the throat bacteria in teenagers

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What was your research question?

How does a new cystic fibrosis (CF) treatment, Trikafta, affect the bacteria living in the back of the throat (oropharynx) in teenagers with CF?

Why is this important?

People with CF often have lung infections due to harmful bacteria. Trikafta is a medication that improves lung function, but its impact on throat bacteria has not been studied in detail. This is important because the bacteria in the throat may influence overall lung health. Adolescents with CF usually have milder lung problems than adults, so understanding how this treatment works on their throat bacteria could offer insights into its broader health benefits for young people with CF.

What did you do?

We followed 20 teenagers with CF, aged 12 to 20, before and after they started taking Trikafta. They took throat swabs before treatment and several times over three months



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during treatment. We then used DNA analysis to study changes in the types of bacteria in their throats.

What did you find?

We found that Trikafta caused small but steady changes in the throat bacteria over three months. The number of different bacterial species increased, which is a sign of a healthier microbiome. Although some bacteria decreased, most of the common bacteria remained the same. Importantly, we noticed an increase in beneficial bacteria, which may help fight harmful bacteria in the future.

What does this mean and reasons for caution?

This study suggests that, in addition to improving lung function, Trikafta may make the bacteria in the throat healthier by increasing bacterial diversity. However, we only followed patients for three months, and more research is needed to understand how long these effects last and whether they have long-term benefits for preventing infections.

What's next?

Further studies are needed to better understand how these changes in throat bacteria impact lung health and if they are long-lasting in people with CF.

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