

Cystic Fibrosis Research News

Title:

A longitudinal study assessing the impact of elexacaftor/tezacaftor/ivacaftor on gut transit and function in people with cystic fibrosis using magnetic resonance imaging (MRI)

Lay Title:

A study on how the newest modulator medication elexacaftor/tezacaftor/ivacaftor affects the gut over time using MRI scans

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What was your research question?

In this study we asked if a treatment called elexacaftor/tezacaftor/ivacaftor (ETI) improved how the gut works in people with CF.

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Why is this important?

Up to two thirds of people with CF experience severe tummy symptoms which stop them from attending school or work. Understanding the causes and finding ways to reduce the severity of tummy symptoms has twice been highlighted as a priority for CF research by the CF community.

What did you do?

We scanned a group of people with CF before and 3, 6 and 18 months after starting treatment and compared how their gut worked before and after starting. The participants underwent eleven MRI scans over the course of six hours and received two specially designed meals. We recruited 24 participants in total, and 21 completed scans at 6 months and 11 completed scans at 18 months.

What did you find?

We saw that food moved through the gut faster after taking ETI for 18 months. There was also more fluid being pushed through the gut after eating, an increase in the amount of fluid in the gut and a decrease in the volume of the large intestine.

We also asked participants to tell us about how bad their gut symptoms were each time they came to us for a scan. This was because we wanted to see whether the changes we measured using the scans could be linked to improvements in tummy symptoms. Our results however did not show a link.

What does this mean and reasons for caution?

We believe that our results show that the gut works better when people with CF are taking ETI. This is because we saw that after starting ETI, some of our results were becoming more like what we would expect see in people without CF. However, we were not able to say that the changes in how the gut worked after starting ETI resulted in less symptoms in our participants. A reason for this may be that we only had a small number of participants or that our participants did not report many troublesome tummy symptoms.

What's next?

Overall, we found an improvement in how the gut works in people with CF when they take ETI for around 18 months. The next step to find out whether these changes can be linked to improvement in gut symptoms and we have a follow up study ongoing called GRAMPUS-CF (<https://www.grampus-cf.org>).



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