European Cystic Fibrosis Society

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Cystic Fibrosis Research News

Title:

Potential of Pharmacogenetics In Minimizing Drug Therapy Problems In Cystic Fibrosis

Lay Title:

How Personalized Genetic Testing for Medication Metabolism May Reduce Problems with Medications for People with Cystic Fibrosis

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What was your research question?

Does a genetic test that examines multiple genes responsible for metabolism of medications in people with cystic fibrosis reduce potential medication-related problems?

Why is this important?

This study is important because it determines whether a genetic test, checking multiple genes that affect how medications work in people with cystic fibrosis, can reduce medication-related problems. By understanding how genes impact drug processing in the body, doctors may be able to personalize treatments better. This could mean medicines work better and are safer for each person. It is about using genetic information to improve healthcare, making treatments more effective and reducing potential side effects. This approach aims to give

people with cystic fibrosis better and more tailored medical care based on their individual genetic makeup.

What did you do?

We looked at people with cystic fibrosis at the University of Utah Health Care System. We used genetic testing to study how certain genes affect the way medications work in people's bodies. Then, we checked their past medication records to see how knowing this genetic information could have changed their treatments for the better. By combining genetic data with medical guidelines, we predicted how often genetic information could lead to changes in medication treatment plans that would help these patients. This helps us see how personalized medicine can make a difference in care for people with cystic fibrosis.

What did you find?

We studied fifty-two people with cystic fibrosis. In 75% of cases, genetic testing suggested that at least one medication change could have been made based on how certain genes affect drug effectiveness in their bodies. On average, we found about four potential treatment adjustments per ten patients due to these genetic insights. Our results highlighted that variations in specific genes can impact how medications work in people with cystic fibrosis. This research suggests that using genetic testing for individual medication metabolism could help doctors better tailor treatments, potentially improving outcomes for people with cystic fibrosis.

What does this mean and reasons for caution?

Genetic testing can identify the impact of genes on how medications work in people with cystic fibrosis, potentially leading to personalized treatment adjustments based on their individual metabolism. It showed that for every ten patients, about four could benefit from such personalized changes. However, caution is needed as genetic testing is one tool, and not all identified changes may lead to better outcomes. Doctors must interpret results carefully and consider individual patient factors when adjusting medications. While promising, more research is needed to fully understand how genetic testing for medication metabolism can consistently improve care for people with cystic fibrosis.

What's next?

Next, we need to confirm if genetic testing for medication metabolism can reliably help doctors adjust treatments for people with cystic fibrosis based on individual differences.

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Research will explore whether and how these personalized approaches consistently improve treatment outcomes for people with cystic fibrosis.

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