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Cystic Fibrosis Research News

Title:

AGE-RELATED LEVELS OF FECAL M2-PYRUVATE KINASE IN CHILDREN WITH CYSTIC FIBROSIS AND HEALTHY CHILDREN 0 TO 10 YEARS OLD

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What was your research question?

Individuals with cystic fibrosis (CF) have gut abnormalities. M2-pyruvate kinase is a protein measurable in stool. Its concentration is high if there is increased turnover of gut cells, with new cells continually growing to replace older existing cells. Our research question was "what are M2-pyruvate kinase levels across different ages in children with CF and healthy children?"

Why is this important?

M2-pyruvate kinase may have potential as a non-invasive marker of gut health. Individuals with CF have been found to have gut inflammation and increased risk of gut cancers at an earlier age to the normal population.

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What did you do?
We collected stool samples from children with CF and healthy children aged 0 to 10 years. M2-pyruvate kinase levels in these samples were measured in the laboratory. We then used statistical tests and graphs to determine the trend of M2-pyruvate kinase across different ages in both groups.

What did you find?
We found that stool M2-pyruvate kinase was consistently low in healthy children while M2-pyruvate kinase was consistently high in children with CF, aged 0 to 10 years old. There was no change in M2-pyruvate kinase with age in either group.

What does this mean and reasons for caution?
This means that it is likely that children with CF have increased turnover of the cells in their gut from a very young age. This may or may not explain increased rates of cancer in the gastrointestinal tract. This also may or may not be linked with intestinal inflammation, which has been proven to exist in patients with CF.

M2-pyruvate kinase may be useful to measure before and after treatments are given to patients with CF. This may provide some clue to the impact of the treatment on the gastrointestinal tract in the patient.

What's next?
It would be useful to understand what is causing the increase in turnover of cells in the gut of patients with CF and whether inflammation in the gut of patients with CF is contributing to this phenomenon. It would be beneficial to investigate therapies to treat gut abnormalities in CF.

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