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Cystic Fibrosis Research News

Title:

PEAK OGTT GLUCOSE IS ASSOCIATED WITH LOWER LUNG FUNCTION IN YOUNG CHILDREN WITH CYSTIC FIBROSIS

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What was your research question?

Our research question was whether or not children with Cystic Fibrosis (CF) less than 10 years of age had more glucose abnormalities identified on the 30-minutely Oral Glucose Tolerance Test (OGTT), when compared with the current gold standard 2 hour OGTT. We also wanted to know whether high glucose levels in these children were related to lung function or nutrition.

Why is this important?

Cystic Fibrosis-related diabetes affects nearly half of all adults with CF but children can have glucose abnormalities that may not meet the criteria for diabetes. We wanted to know whether these early "pre-diabetic" abnormalities have an impact on lung function or nutrition.

What did you do?

We looked back at all of the 30-minutely glucose tolerance tests performed at our centre in children with CF <10 years of age and compared these results with the 2 hour glucose level and then examined the relationship between glucose and lung function and weight/height. We also compared the results of OGTT with Continuous Glucose Monitoring (CGM) results.

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What did you find?

The maximum glucose on 30-minutely OGTT was higher than the 2 hour glucose level in 25/27 (93%) participants. The children with higher maximum glucose levels had lower lung function and poorer nutrition for their age determined by weight compared to peers. Some of the participants had CGM results in the diabetic range and CGM results were often higher than the maximum detected by the 2-hour glucose level or even the 30-minutely OGTT.

What does this mean and reasons for caution?

This research suggests that children with CF <10 years of age may already have abnormalities in their glucose levels that are not detected by the current test we use. These high glucose levels also appear to be related to lung function and nutrition. However, we do not know whether identifying and treating these "pre-diabetic" elevated glucose levels will lead to clinical improvements for our patients in this age group.

What's next?

More research is required to determine whether treatment of early glucose abnormalities (with insulin) in this age group will lead to better lung function and potentially delay the onset of CFRD. With the introduction of CFTR modulators it will be important to determine whether these new treatments have an impact on the high glucose levels.

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