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Title:

PREVALENCE OF HYPOGLYCEMIA DURING ORAL GLUCOSE TOLERANCE TESTING IN ADULTS WITH CYSTIC FIBROSIS AND RISK OF DEVELOPING CYSTIC FIBROSIS-RELATED DIABETES

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What was your research question?

Hypoglycemia is a state where sugar in the blood is low. Although hypoglycemia in cystic fibrosis (CF) patients during the oral glucose tolerance test (OGTT) has been reported, little is known about these patients and if they are at increased risk for CF-related diabetes (CFRD). We wanted to describe these patients and their risk for developing CFRD.

Why is this important?

Untreated hypoglycemia can result in dizziness and confusion, so it is important to understand who is at risk for hypoglycemia. Also, CFRD is associated with a decline in lung function, weight loss, and decreased survival. If hypoglycemia during the OGTT is a marker for developing CFRD in the future, identifying these people early provides an opportunity for education and increased monitoring.

What did you do?

We used the Toronto CF registry to look at all individuals followed at our adult CF clinic who had an OGTT between 1996 and 2015. We compared the characteristics of patients who experienced hypoglycemia during the OGTT to those who did not. We also compared the risk of developing CFRD between patients who experienced hypoglycemia and those who did not.

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What did you find?

A large percentage of patients experienced hypoglycemia during the OGTT. Males and those who have one copy of the most common genetic mutation, deltaF508, were more likely to experience hypoglycemia. Patients who had hypoglycemia during the OGTT were at lower risk of developing CFRD compared to patients who did not experience hypoglycemia.

What does this mean and reasons for caution?

Due to the high proportion of patients who experienced hypoglycemia during the OGTT, it is important to consider strategies to reduce the risk of a severe hypoglycemic event; for example, providing a lunch to patients having an OGTT in clinic, and education around hypoglycemia awareness and management. The lower incidence of CFRD in the hypoglycemia group suggests that hypoglycemia during an OGTT does not represent a precursor state to developing CFRD but further research is needed to confirm these findings.

What's next?

Future studies need to examine patients for a longer time period after the first episode of hypoglycemia in order to see if they eventually develop diabetes. Also, the symptoms related to low blood sugar should be described in future work.

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