

Title: Predictors of diabetes technology adoption in patients with CF related diabetes

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Cystic Fibrosis Related Diabetes (CFRD) is a common extrapulmonary complication of cystic fibrosis. Use of continuous glucose monitors (CGM) has shown clinical and economic benefits in patients with type 2 diabetes, but little evidence has been presented in patients with CFRD. We examined CGM and insulin pump use in patients with CFRD and demographic and treatment related elements to determine factors that predict successful implementation of diabetes technology.

This study was a retrospective chart review of patients with insulin treated CFRD at a single center. Demographics, BMI, FEV1, HbA1C, diabetes duration, insurance type, and insulin use were compared between patients who had implemented diabetes technology for at least 6 months and those who had not.

We evaluated 46 patients with insulin treated CFRD, of whom 17 successfully implemented CGMs and 8 implemented pumps. Lab values, office visits, and insurance type were not significantly different between CGM users and non-users. Diabetes duration was significantly longer in those using CGM compared to no CGM. There was a non-significant trend toward lower HbA1C after CGM implementation. Pump users were not different from non-pump users in terms of lab values, diabetes duration, or outpatient visits. However, pump users had a lower HbA1C after successfully implementing pump use.

Longer diabetes duration was associated with sustained CGM use, which may reflect more advanced disease in this group. Our data suggests that patients with CFRD have improvement in diabetes control after technology implementation, but further research is needed to determine which subset of patients benefit most.