Continuous intersticial glucose monitoring in early detection of glucose tolerance abnormalities in adolescents with cystic fibrosis.

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Introduction

Cystic fibrosis-related diabetes (CFRD) and glucose abnormalities have a negative impact on pulmonary function and survival in cystic fibrosis (CF) patients. Oral glucose tolerance test (OGTT) is the screening test of choice for CFRD, although undetected high glucose levels can be missed with this test. The use of a continuous interstitial fluid glucose monitoring system (CGM) can be useful in these patients.

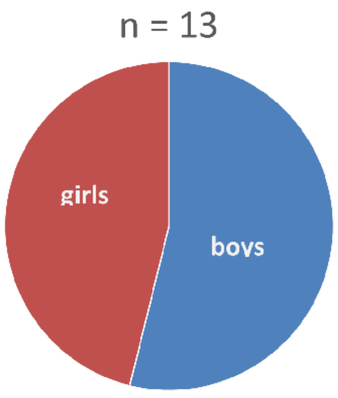
Objective

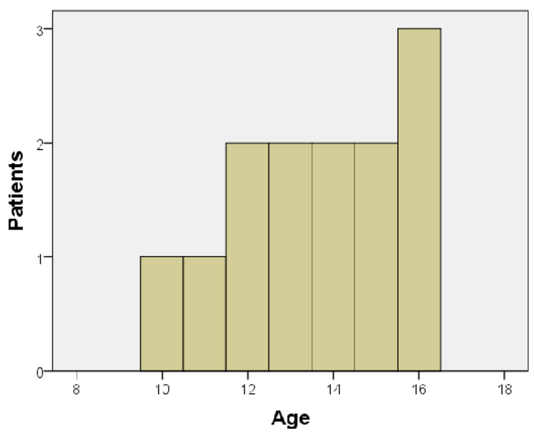
To determine the role of CGM in the early detection of glucose abnormalities in CF.

Methods

- Inclusion: CF children 10 to 17 years old without diabetes.
- Exclusion: Infections / corticosteroid treatment course last 6 weeks.
- Review: OGTT in the last year.
- CGM system was placed during five days.

Results

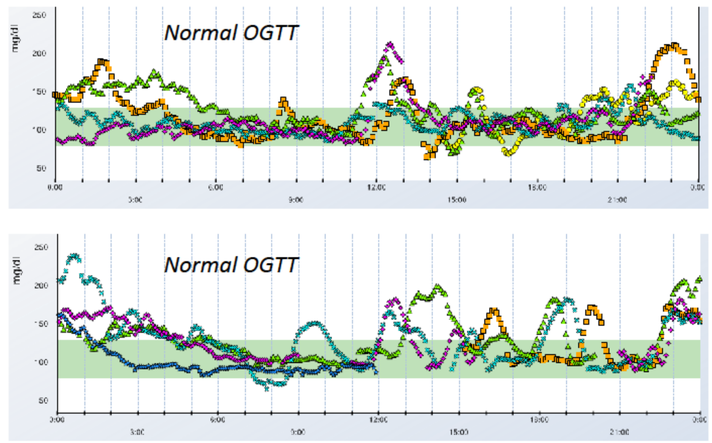


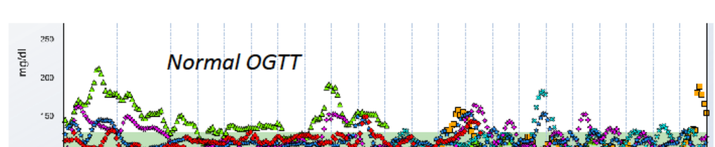


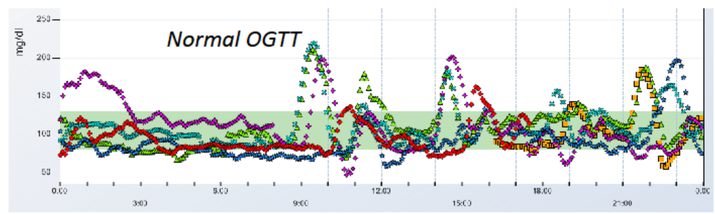
OGTT and CGM results

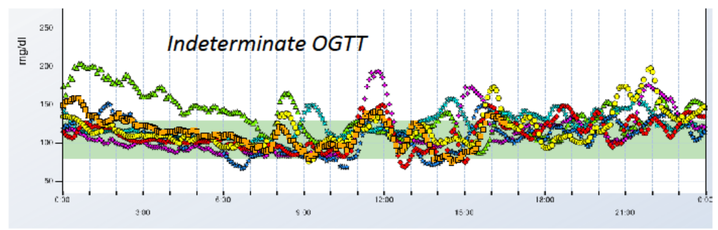
		OGTT				
OGTT Definition		**Normal**	**Indeter-minate**	**Impaired Glucose Tolerance**	**CFRD**	
Glucose levels (mg/dl) in OGTT times		0h < 126 1h < 200 2h < 140	1h ≥ 200	2h: 140 -199	0h ≥ 126 2h ≥ 200	
CGM	≥ 200	**4**	1	1	0	6
	< 200	6	1	0	0	7
	total	10	2	1	0	13
CGM glucose mean		99.8 ± 9.3	119.6 ± 10.6	136 ± 28		

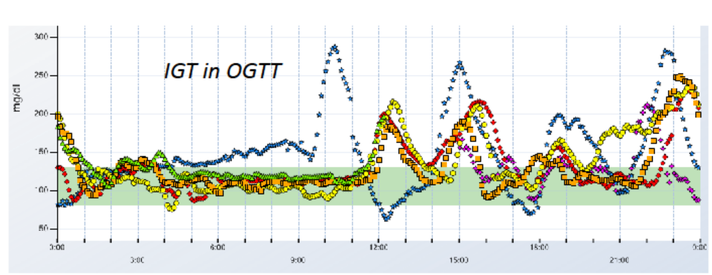
Patients with CGM excursions over 200mg/dl











Conclusions

- CGM could be a useful tool to detect glucose excursions in CF children with normal OGTT.
- The CGM systems are a comfortable way to detect hyperglycemia in a real situation.
- It is still unknown how the development of CFRD in these patients with impaired glucose can be delayed.

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