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Control/Tracking Number: 2023-LB-5700-Diabetes

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Traditional Risk Factors for Elevated A1c Persist Among Youth with T1D Using CGM: Results from the 4T Study 1

Author Block: JAEHYUN KIM, DESSI P. ZAHARIEVA, FRANZISKA K. BISHOP, DAVID SCHEINKER, RAMESH JOHARI, MANISHA DESAI, KOREY K. HOOD, DAVID M. MAAHS, ANANTA ADDALA, Seongnam, Korea, Republic of, Stanford, CA, Palo Alto, CA

Abstract:

Continuous glucose monitoring (CGM) use soon after T1D diagnosis in the 4T Study was associated with improved glycemic outcomes. We evaluated participant factors associated with elevated versus in target A1c for youth in the 4T Study.

All youth from the 4T Study 1 (n=133) were evaluated. In this analysis, the 110 youth who had a final A1c between 6-13 months were included in a complete case analysis. These 110 youth were comparable to the 133 4T Study 1 youth by race/ethnicity, insurance, preferred language, and age. Group differences by non-ordered A1c categories were evaluated for categorical (race/ethnicity, insurance, gender, and language) and continuous (age and time from CGM start) variables via chi-square and ANOVA, respectively.

A majority of youth in the 4T Study 1 met glycemic targets (65% with A1c $\leq$ 7% between 6-13 months post-diagnosis). Age, race/ethnicity, and insurance status were significantly associated with A1c categories (p=0.02 for all; **Table**). Higher A1c categories were more likely to include Hispanic youth and youth with public insurance.

In the 4T Study 1, Hispanic youth and youth with public insurance had higher A1c categories despite similar CGM access and training. These findings suggest the need to address additional drivers of disparities in addition to CGM access. Approaches focused on health equity are required to improve glycemic outcomes in all youth newly diagnosed with T1D.

	Overall (n=110)	A1c $\leq$ 7% (n=72)	7 < A1c $\leq$ 8% (n=22)	8 < A1c $\leq$ 9% (n=10)	A1c > 9% (n=6)	p-value
Race/Ethnicity						0.02
Asian	10 (9.1%)	8 (11.1%)	0 (0%)	2 (20.0%)	0 (0%)	
Hispanic	32 (29.1%)	19 (26.4%)	4 (18.2%)	3 (30.0%)	6 (100%)	
Other	12 (10.9%)	8 (11.1%)	2 (9.1%)	2 (20.0%)	0 (0%)	
Unknown	22 (20.0%)	15 (20.8%)	5 (22.7%)	2 (20.0%)	0 (0%)	
White or Caucasian	34 (30.9%)	22 (30.6%)	11 (50.0%)	1 (10.0%)	0 (0%)	
Insurance						0.02
Private	70 (63.6%)	50 (69.4%)	11 (50.0%)	8 (80.0%)	1 (16.7%)	
Public	40 (36.4%)	22 (30.6%)	11 (50.0%)	2 (20.0%)	5 (83.3%)	
Youth Age						0.02
Mean Years (SD)	10.1 (4.37)	11.0 (4.20)	7.68 (4.19)	10.2 (4.16)	9.98 (4.59)	
Youth Gender						0.39
Female	51 (46.4%)	29 (40.3%)	13 (59.1%)	4 (40.0%)	5 (83.3%)	
Male	58 (52.7%)	42 (58.3%)	9 (40.9%)	6 (60.0%)	1 (16.7%)	
Non-binary	1 (0.9%)	1 (1.4%)	0 (0%)	0 (0%)	0 (0%)	
Family's Language						0.45
English	90 (81.8%)	60 (83.3%)	17 (77.3%)	10 (100%)	3 (50.0%)	
Spanish	18 (16.4%)	10 (13.9%)	5 (22.7%)	0 (0%)	3 (50.0%)	
English & Other	1 (0.9%)	1 (1.4%)	0 (0%)	0 (0%)	0 (0%)	
Other	1 (0.9%)	1 (1.4%)	0 (0%)	0 (0%)	0 (0%)	
Time From CGM Start						0.71
Mean Months (SD)	10.5 (1.67)	10.5 (1.69)	10.8 (1.51)	10.2 (2.16)	10.5 (1.15)	

Category (Complete): 15-B Pediatrics—Type 1 Diabetes

Financial Support (Complete):

* ADA Support: No

Supported by: : NIDDK, K23DK13134201 NIDDK, R18DK122422

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Status: Complete

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2451 Crystal Drive, Suite 900

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