

Evaluating the Impact of a Combined Real-Time CGM/Digital Health Solution on Glucose Control for People with Type 2 Diabetes

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BACKGROUND AND AIMS

- Optimizing glucose management for people with type 2 diabetes requires them to know their glucose data and understand what to do with it
- Real-time continuous glucose monitoring (rtCGM) solves the problem of providing glucose data to individuals with diabetes
- The efficacy of rtCGM on glycemic outcomes has now been demonstrated for individuals with type 2 diabetes not treated with intensive insulin¹
- In people with diabetes not prescribed insulin, self-management behaviors related to food, activity, medication taking, and others are extremely important
- Digital health solutions can be effective at helping people with type 2 diabetes improve lifestyle factors that affect their diabetes²
- We hypothesized that combining rtCGM with AI-driven digital health coaching can thus have significant impact on glucose control

METHODS

- We reviewed real-world data from individuals with type 2 diabetes who were enrolled in a program that provided both a rtCGM system as well as a digital health coaching platform
- Enrollment targeted individuals with type 2 diabetes who were not prescribed insulin
- The data were de-identified according to our internal data use policy. We examined time in range (TIR), time below range (TBR), and the glucose management indicator (GMI) at baseline and after 24 weeks of enrollment in the program
- We also identified three cohorts by duration of rtCGM use: continuous use for 24 weeks (highest users), use between 13 and 24 weeks (intermediate users), and use less than 13 weeks (lowest users)

RESULTS

- Of the 91 participants in the program, 57% were male, and the mean age was 52 years (SD+/- 10)
- Participants used their CGM device for a mean of 18 weeks out the 24 weeks (75%)
- TIR and GMI improved during the program for all participants and for all subgroups that were examined
- The intermediate CGM use subgroup had the highest TIR and GMI improvement with a TIR increase of 32% and GMI decrease of 1.4

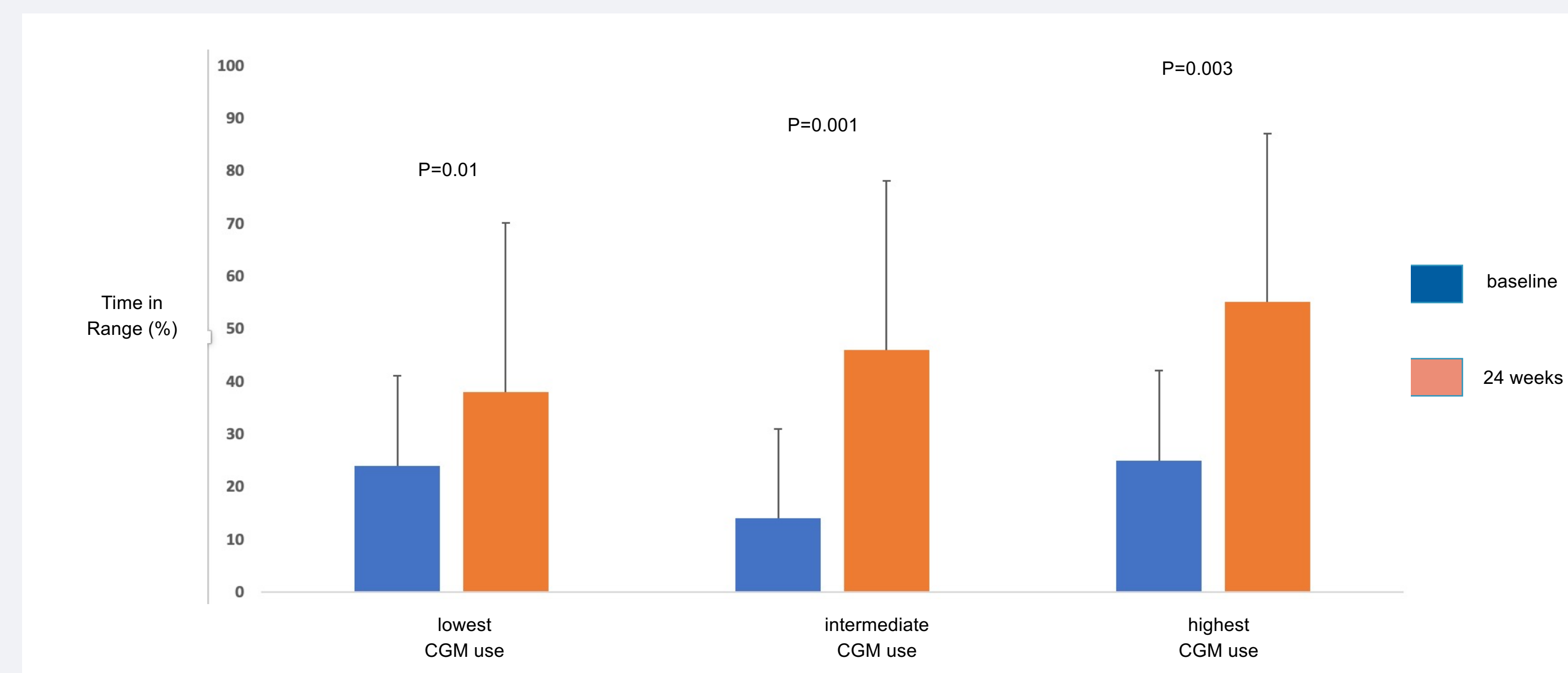
Table 1: Overall results

participant group	n	TIR			TBR			GMI		
		baseline	end of study	p value	baseline	end of study	p value	baseline	end of study	p value
all participants	91	50	57	0.04	1	2	0.273	7.9	7.6	0.04
baseline mean glucose > 180 mg/dL	46	22	45	0.000002	0.2	0.8	0.067	9.0	8.1	0.00002

Table 2: Analysis by CGM usage for participants with baseline mean glucose > 180 mg/dL

cohort	n	TIR			TBR			GMI		
		baseline	end of study	p value	baseline	end of study	p value	baseline	end of study	p value
highest CGM use	13	25	55	0.003	0	0.1	0.168	8.8	7.7	0.005
intermediate CGM use	12	14	46	0.001	0	1.6	0.08	9.4	8.0	0.003
lowest CGM use	21	24	38	0.01	0.5	0.7	0.35	9.0	8.4	0.02

Figure 1: TIR by CGM usage for participants with baseline mean glucose > 180 mg/dL



CONCLUSIONS

- The combination of rtCGM and a digital health solution significantly improved glycemic measures
- The degree of improvement appeared to be correlated with duration of rtCGM use
- The largest improvement took place in the intermediate CGM use group, which had a TIR increase of 32% and a GMI improvement of 1.4, which corresponds to an average glucose reduction of 60 mg/dL
- The mechanisms for this improvement and the specific patterns of engagement with the digital health solution require further study
- These data may help inform clinicians on how to prescribe rtCGM for non-insulin users

REFERENCES

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