

Effectiveness of Continuous Glucose Monitoring (CGM) in Older Adults with Type 2 Diabetes Treated with Basal Insulin

Shichun Bao, MD, PhD, Ryan Bailey, MS, Peter Calhoun, PhD, and Roy W. Beck, MD, PhD. DIABETES TECHNOLOGY & THERAPEUTICS
Volume 24, Number 5, 2022. DOI: 10.1089/dia.2021.0494

Objective

To evaluate the effectiveness and safety of CGM in older adults with type 2 diabetes treated on basal insulin only in a post-hoc analysis of the MOBILE study.

Study Outcomes Measured

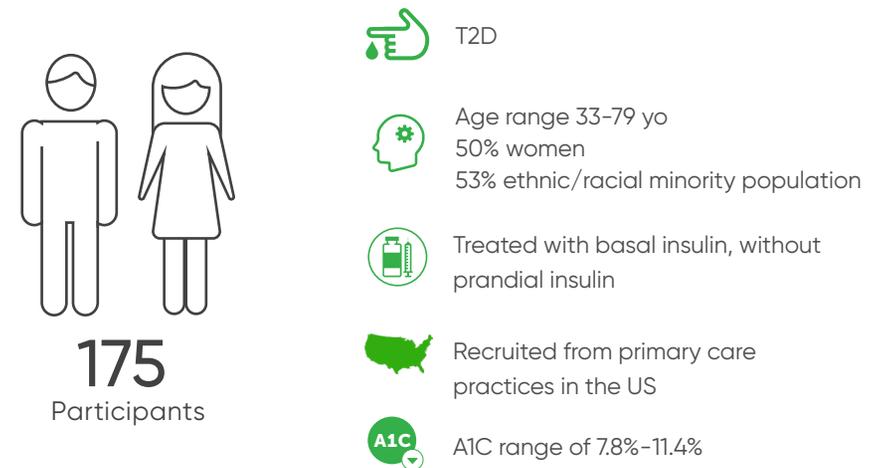
The primary outcomes measured were A1C, time in target glucose range of 70-180 mg/dL, time with glucose level at ≥ 250 mg/dL, and mean glucose level at 8 months.

Results

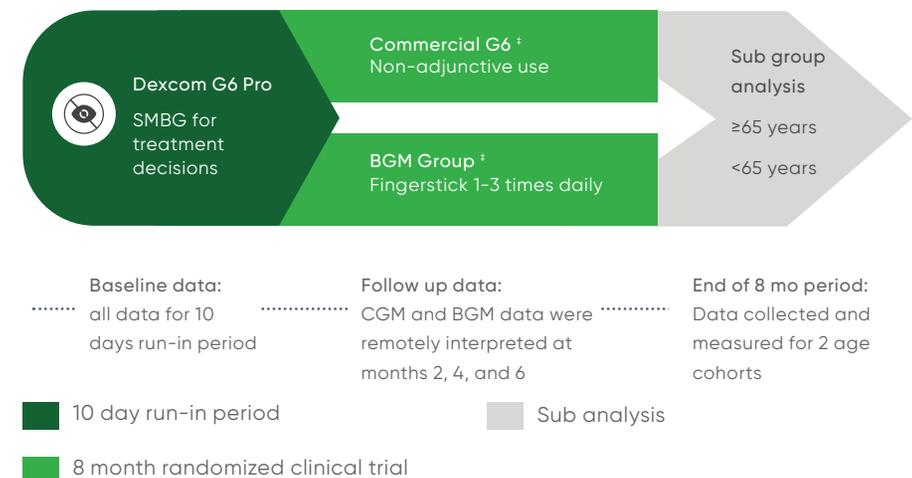
- Primary outcome was the -1.08% reduction in A1C among CGM group in both age cohorts, compared to the Blood Glucose Monitoring (BGM) group, that had mean reductions of -0.38% for those ≥ 65 years*, and -0.73% for those < 65 years.**
- Participants ≥ 65 years on CGM had a mean increase in Time in Range (TIR) of 16% compared to their baseline levels, whereas the BGM group exhibited a mean TIR change of -5%. Adjusted difference, 19% ($P < 0.01$).

* adjusted difference = -0.65% (95% CI -1.49, 0.19) (p=0.13) ** adjusted difference = -0.35% (95% CI -0.77, 0.07) (p=0.10)

Participant Demographics



Following the 8 month period †, participants were divided in 2 groups - ≥ 65 yo (n=42) and < 65 yo (n=133).



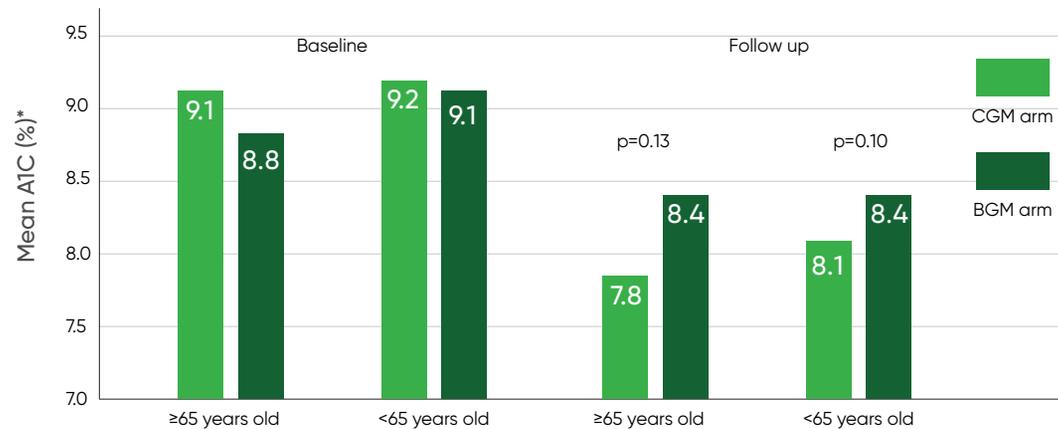
† A1C was collected at randomization, month 3, and month 8 and measured at a central laboratory

‡ Participants in the CGM group wore the device continuously up through 8 months, whereas participants in the BGM group wore a blinded CGM during the 10 days after the 3-month visit and 10 days leading up to the 8-month visit.

Main Outcomes



Mean absolute reduction in HbA1c was -1.08% in the CGM group for both age cohorts, whereas the mean reduction in the BGM group was -0.38% and -0.73% in the ≥65 and <65 years age groups, respectively. Changes in A1C were largely consistent across both groups, irrespective of age.



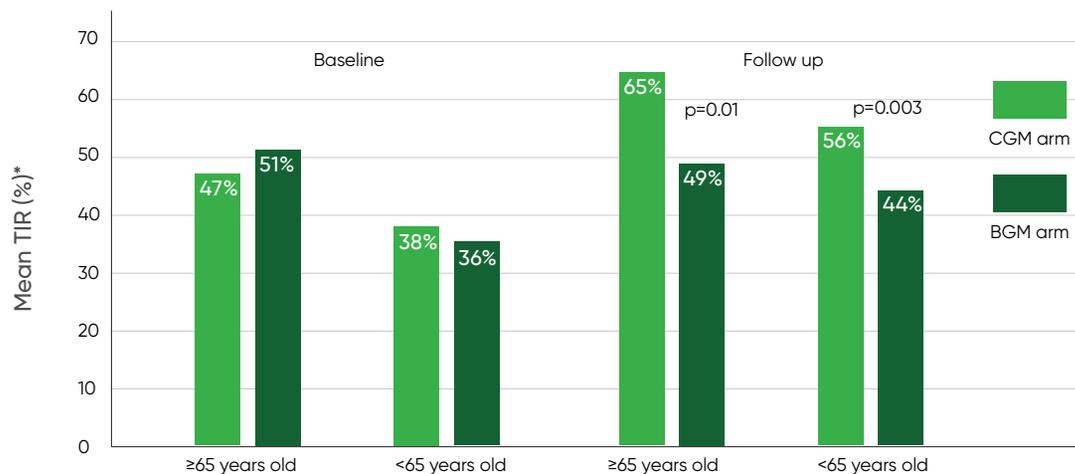
≥1.0% ↓

A1C DECREASE IN OVER HALF OF PARTICIPANTS ON CGM REGARDLESS OF AGE†



≥65 years TIR increase of 16%±24% (CGM arm) and -5%±22% (BGM arm) (adjusted difference = 19%, 95% CI 4 to 35, P = 0.01).

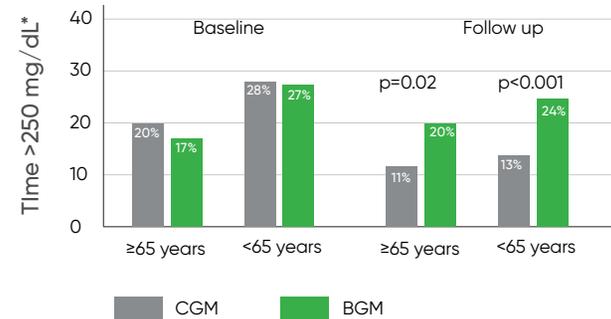
<65 years TIR increase 17%±29% (CGM arm) 8%±26% (BGM arm) (adjusted difference = 12%, 95% CI 4 to 19, P = 0.003).



59%

PARTICIPANTS ≥65 YEARS ON CGM HAD AN INCREASE IN TIR OF ≥15% versus 14% on BGM (P=0.003)

Time spent >250 mg/dL decreased in both age groups, more significantly in the CGM arm.



KEY TAKEAWAYS

- Use of CGM is associated with greater A1C decrease than BGM alone in adults with T2D on basal insulin, regardless of their age.^{1,2}
- Using CGM is beneficial for adults aged 65 and above who have type 2 diabetes (T2D) and struggle to control their glucose levels using only basal insulin.²
- The improvements in glucose control seen with CGM are just as significant in older adults as they are in younger ones.¹

1. Bao S, Bailey R, Calhoun P, Beck RW. Effectiveness of Continuous Glucose Monitoring in Older Adults with Type 2 Diabetes Treated with Basal Insulin. *Diabetes Technol Ther.* 2022 May;24(5):299-306. doi: 10.1089/dia.2021.0494.

2. Martens T, et al; MOBILE Study Group. Effect of Continuous Glucose Monitoring on Glycemic Control in Patients With Type 2 Diabetes Treated With Basal Insulin: A Randomized Clinical Trial. *JAMA.* 2021 Jun 8;325(22):2262-2272. doi: 10.1001/jama.2021.7444. PMID: 34077499; PMCID: PMC8173473.

For more information, visit provider.dexcom.com

*Bar plots showing mean values at baseline and follow-up (month 3 and month 8 combined) by treatment group and age group. P-values for the mean difference between treatment groups within age groups are shown.

†Compared to 23% of participants ≥ 65 and 45% of participants <65 using BGM (P=0.003 and P=0.56 respectively)