Effect of Continuous Glucose Monitoring on Glycemic Control in Patients With Type 2 Diabetes Treated With Basal Insulin (MOBILE Study)

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Background

Continuous glucose monitoring (CGM) has been shown to be beneficial for adults with type 2 diabetes using intensive insulin therapy, but its use in type 2 diabetes treated with basal insulin without prandial insulin has not been well studied.

Objective

To determine the effectiveness of CGM in adults with type 2 diabetes treated with basal insulin without prandial insulin in primary care practices.

Methods

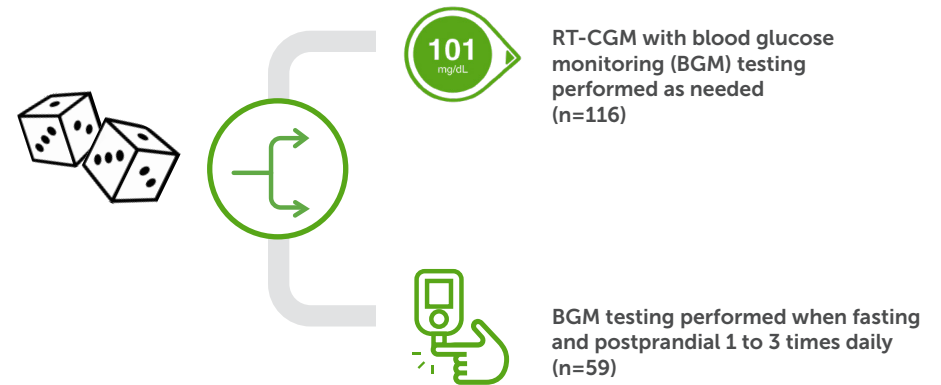### Participants Eligibility
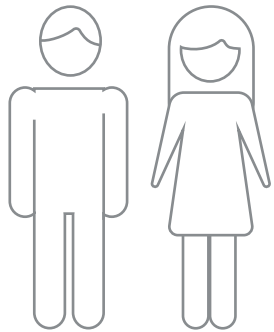
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Participants

- T2D
- Mean age 57
  50% women
  53% ethnic/racial minority population
- Treated with basal insulin, without prandial insulin
- Recruited from primary care practices in the US
- A1C range of 7.8%-11.5%

Methods

8 month randomized clinical trial

101 mg/dL — RT-CGM with blood glucose monitoring (BGM) testing performed as needed (n=116)

BGM testing performed when fasting and postprandial 1 to 3 times daily (n=59)

A1C The primary outcome was hemoglobin A1c (HbA1c) level at 8 months. Key secondary outcomes were CGM-measured time in target glucose range of 70 to 180 mg/dL, time with glucose level at greater than 250 mg/dL, and mean glucose level at 8 months.

Results

Mean HbA1c level decreased from 9.1% at baseline to 8.0% at 8 months in the CGM group and from 9.0% to 8.4% in the BGM group.

-0.4%
Mean change
[95% CI, −0.8% to −0.1%]; P=.02

	101 mg/dL	
Mean A1C Baseline	9.1%	9.0%
8-month primary outcome	8.0%	8.4%

Risk-adjusted difference was significant

- Mean percentage of TIR 70-180 mg/dL at 8 month was equivalent to 3.6 hours more per day for CGM group
- Mean percentage of time >250 mg/dL at 8 months was equivalent to 3.8 hours less per day with glucose >250 for CGM group

	101 mg/dL		
Mean percentage of TIR 70-180 mg/dL at 8 months	59%	43%	(adjusted difference, 15% [95% CI 8% to 23%]; P<0.001)
Mean percentage of time >250 mg/dL at 8 months	11%	27%	(adjusted difference, -16% [95% CI -21% to -11%]; P<0.001)

Key takeaways

Among adults with poorly controlled type 2 diabetes treated with basal insulin without prandial insulin, CGM, as compared with BGM, resulted in **significantly lower HbA1c levels** at 8 months.

The CGM group reported high rates of satisfaction with CGM and **median CGM use was 6.1 days/week** over 8 months[1]

A1C reduction and glycemic **improvements in CGM group** without a significant increase in insulin doses or non-insulin medications[1]

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