

Glucomander™ Outpatient, a Cloud-Based Insulin Management Solution Adjusted Insulin Doses and Achieved 2.7% Drop in A1c Percentage Points

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BACKGROUND

Treatment of diabetes with multiple daily injections, using a regimen of basal and rapid-acting insulins is widely accepted as the standard of care. This study evaluated clinical results of Glucomander Outpatient, a commercially available, cloud-based software solution that analyzed patient glucose data and calculated adjustments to a patient's insulin dose regimen.

METHODS

The study was comprised of 41 patients who were previously treated with standard of care methods. Patient mix included both type 1 and type 2 diabetes and also included those at high risk related to their lack of access to care, recent hospitalizations, and other comorbidities (COPD requiring steroids, ESRD, liver failure, transplant). During the study period of 3 months, all insulin dose adjustments were calculated using Glucomander Outpatient. The study was a paired before-and-after design.

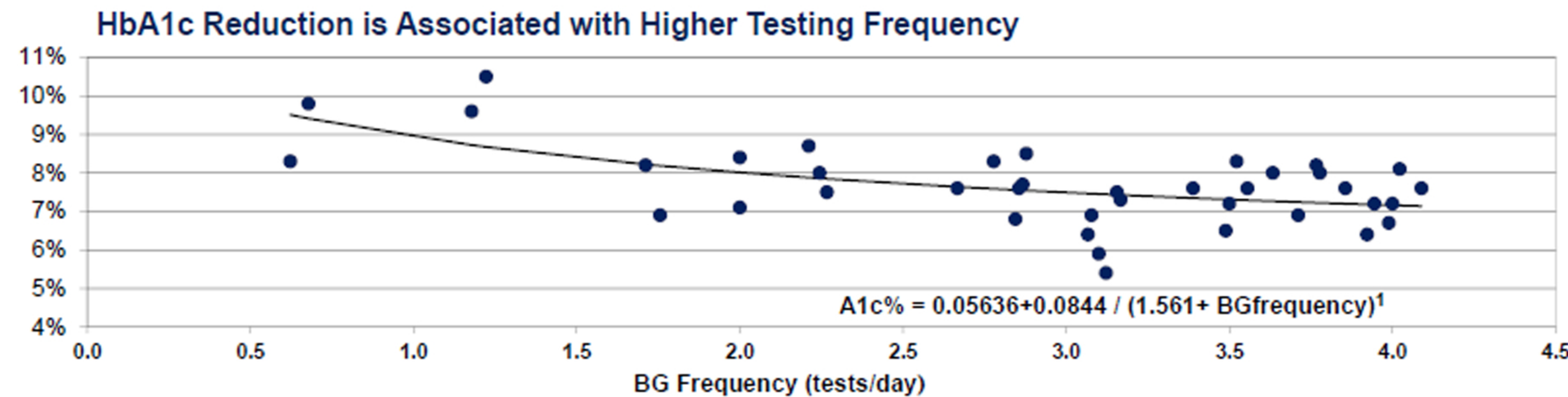
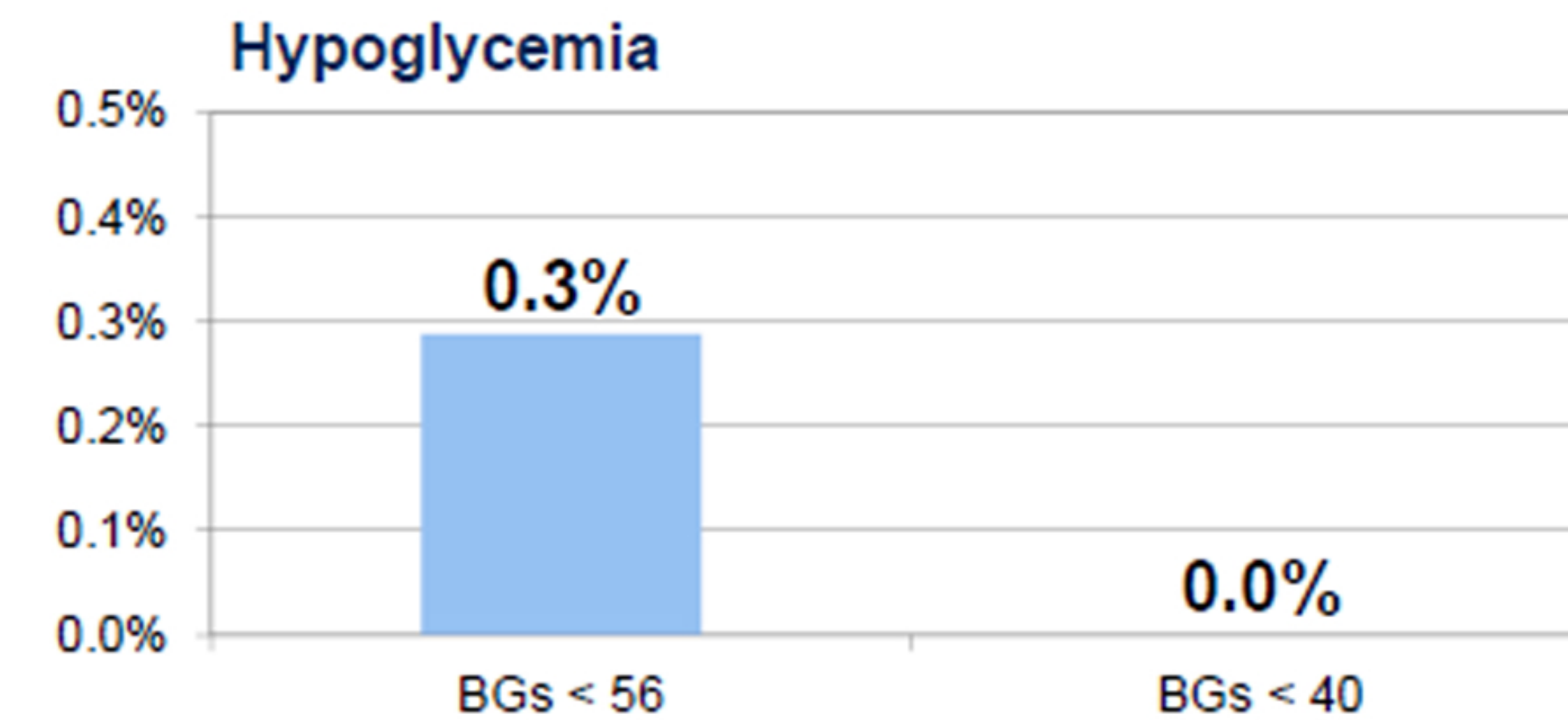
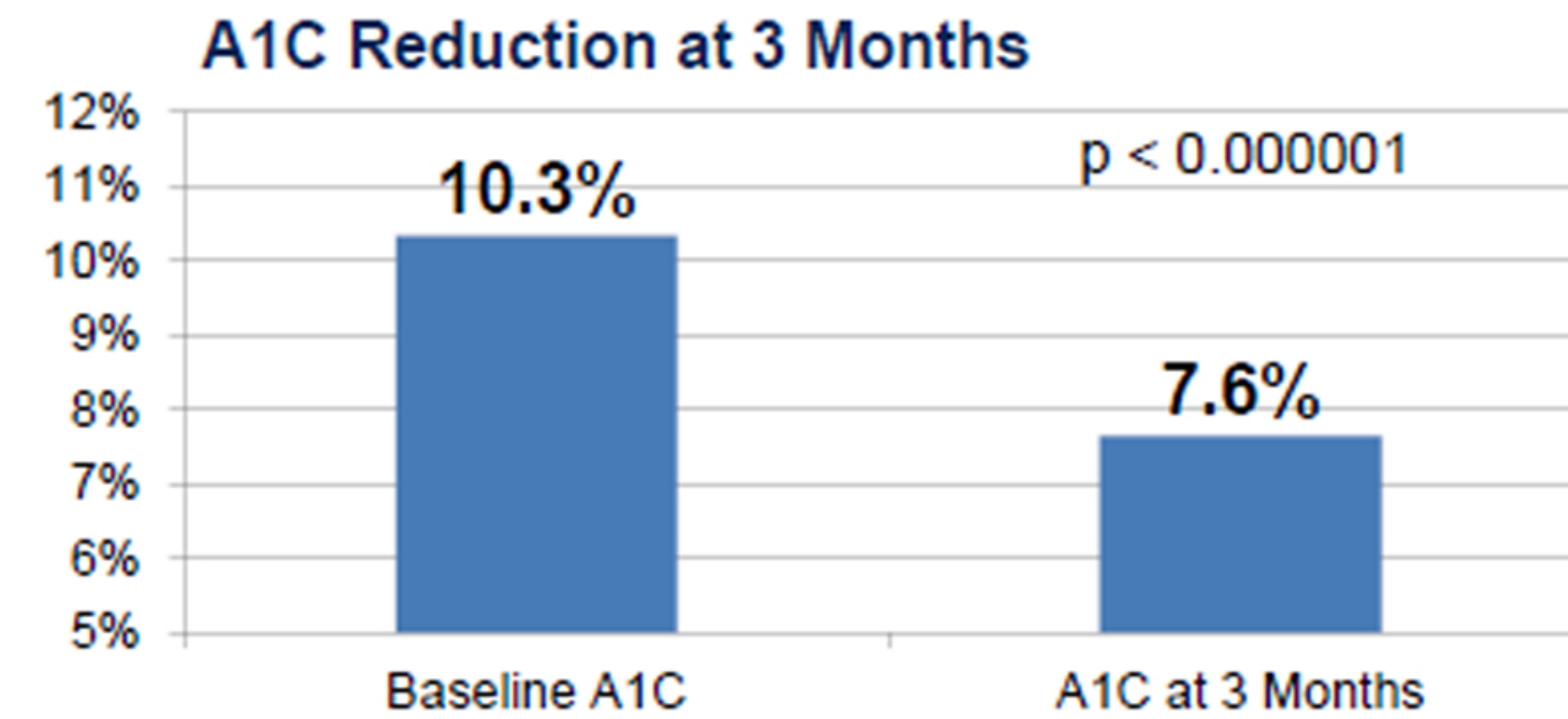
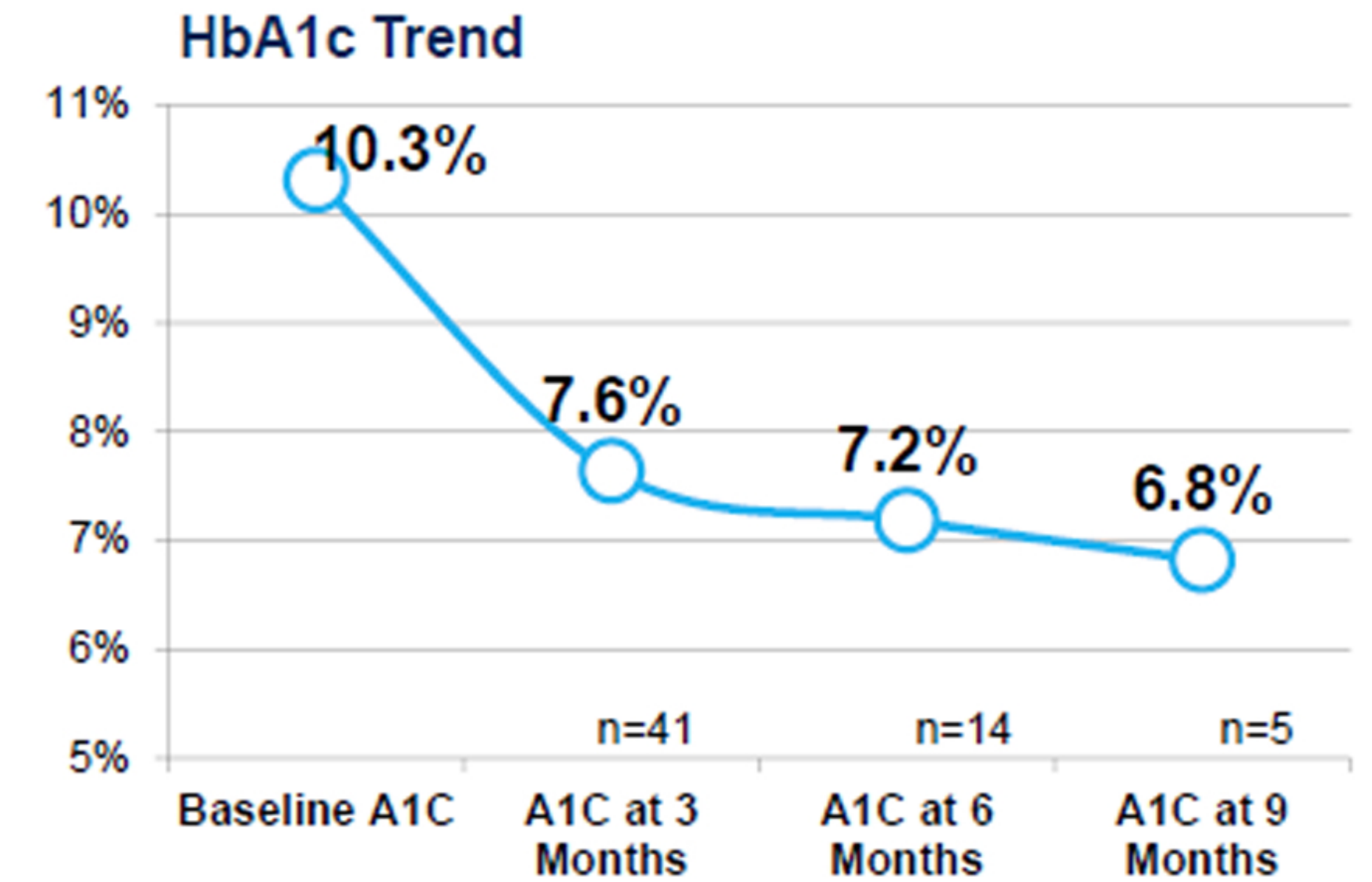
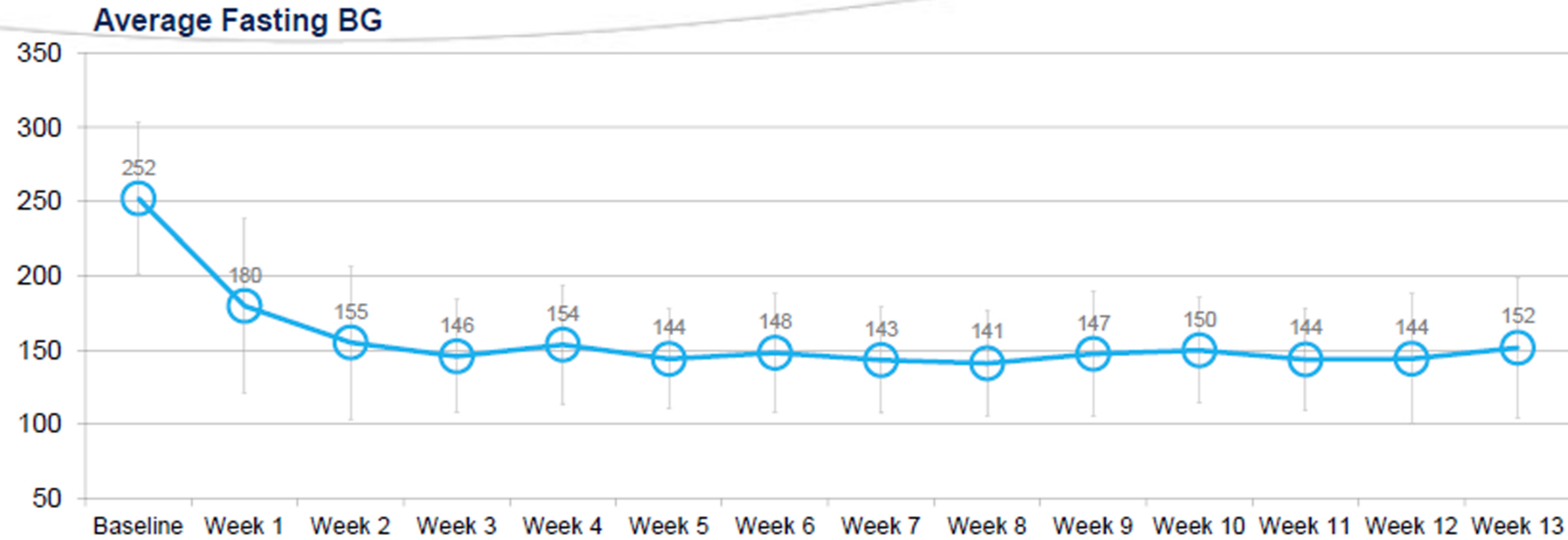
Blood glucose data was collected using the Telcare cellular glucose meter, which was able to provide near real-time glucose results in the cloud. Updated insulin doses were provided to a healthcare professional for review and sent to the patient, either on the display of the patient's glucose meter or via a mobile text message. Number of blood glucoses and % of hypoglycemic events were also calculated for the duration of the study.

CONCLUSION

The use of Glucomander Outpatient is effective at treating all patients, even those with complex conditions, is associated with few instances of hypoglycemia, and no instances of severe hypoglycemia. Large prospective randomized clinical trials are needed to confirm these findings.

RESULTS

The results of efficacy and safety outcome parameters are outlined in the tables and figures in the right two columns:



Number of Patients:	41
Average Age, years:	58 ±13
Male, n (%):	25 (63%)
BMI, kg/m2:	32 ±7
DM Type 2, n (%):	33 (80%)
DM Type 1, n (%):	8 (20%)
Years with DM:	14 ±12
Basal Insulin (Toujeo), n (%):	30 (75%)
Basal Insulin (Lantus), n (%):	6 (15%)
Basal Insulin (Levemir), n (%):	4 (10%)
Basal Insulin (Tresiba), n (%):	1 (3%)
Average # Tests/Day:	2.9 ±1
Average Initial TDD	0.8 ±0.4 units/kg
Average Final TDD	1.1 ±0.6 units/kg
Average # Days Until Fasting BG < 180	6.1 ±4 days

Number of BGs	10,681
% BGs < 70 mg/dL	1.6%
% BGs < 40 mg/dL	None

1. The model used in the regression is from: Davidson et al., Bode, Hebblewhite et al: A Cause-and-Effect-Based Curvilinear Model that Predicts the Effects of Self-Monitoring of Blood Glucose Frequency on Hemoglobin A1c and is Suitable for Statistical Correlations. *Jnl Diab Sci & Tech.* 1(6): Nov 2007.

