Decrease in Estimated A1C for people in High-risk over a full year of users monitoring with a digital Diabetes management system

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Introduction

One of the goals of a digital Diabetes management system is to improve patient's self-management and control of their condition. Hemoglobin A1C (HbA1C or A1C) values reflect the average of a person's blood glucose levels over the previous two-three months and are reported as a percentage of total Hemoglobin. Digital engagement can play a pivotal role in the care of patients with Diabetes, assisting patients to enhance their compliance to treatment and aim to reduce their A1C values over time.[1]

Method

A retrospective data evaluation study was performed on the Dario™ cloud database. A population of high-risk (with baseline A1C > 7.5 percent), active users that continuously measured their blood glucose using Dario™ BGMS during a full year was evaluated. The study assessed estimated A1C values based on blood glucose readings during a full year as recorded in the database. The estimated A1C values were calculated in periods of 3, 6, 9 and 12 months and compared to first 30 days as a starting point of analysis.

Reduction in A1C

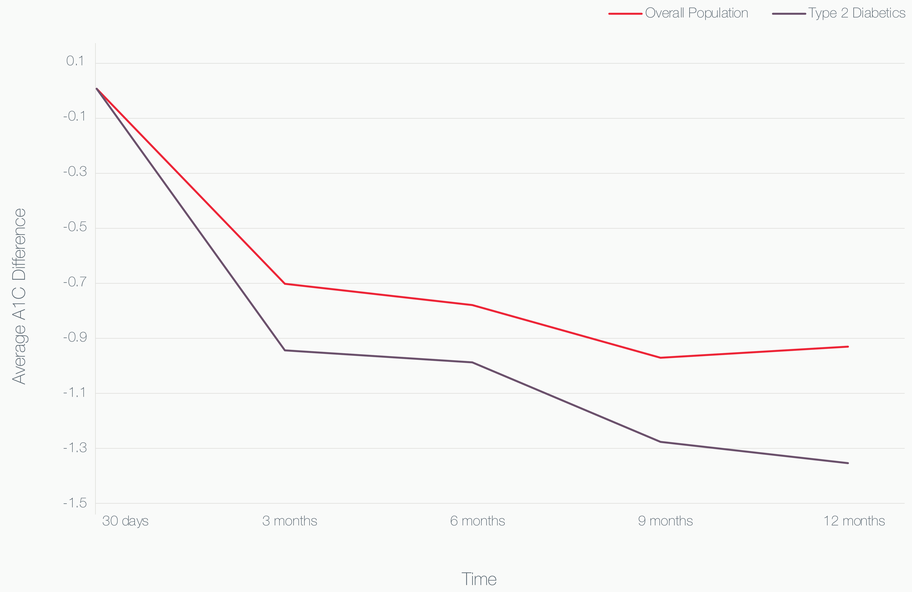

Figure 1:
The graph represents the difference in estimated A1C values over a year in High-Risk Dario users.

Results

For a group of 363 high-risk Dario BGMS users (A1C>7.5) with greater than two blood glucose measurements taken per day in the first 30 days and in the 12th month of the year :

- Estimated A1C was improved by -0.7, -0.8 and -1 percent from baseline to 3, 6 and 9 months respectively, and remained -1 percent lower following 12 months of usage (8.65±0.96 vs.7.65±1.0).
- Subgroup analyses by diabetes type revealed substantial estimated A1C improvement among people with T2D showing improvement of -1 percent from baseline to 3, 6 months and -1.4 percent following 12 months (8.5 ± 0.91% vs. 7.14% ± 0.98%).

Conclusions

- Patients using a digital Diabetes management platforms have the potential to promote behavioral modification and enhance adherence to diabetes management, demonstrating better glycemic control. The study demonstrates an improvement in glycemic outcomes and sustainment for a significant time period.
- The results of the present study substantiate several elements in digital diabetes management. Previous studies had shown that users of the mobile platform had fewer hyperglycemic events compared to the control group.[2] Additionally, the use of mobile app-based interventions yields clinical outcomes (HbA1C reduction) among diabetes users, especially among those with T2D.[3,4]

References

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