



Continuous Glucose Monitoring and Glycemic Control in People With Type 2 Diabetes: Real-World Study



Authors: Alondra Nicole Maldonado Reyes¹, Arelly Joseline Lugo de la Cruz¹, Cecilia Nohemí Ramírez Frias¹, Martha Evelyn Mirafuentes Ríos¹, Eliud Salvador Aguilar Barrera^{1,2}
Affiliation: ¹Nutrition Department, CICS-UMA, Instituto Politécnico Nacional. Mexico City, Mexico. ²Centro de Atención a la Diabetes, Mexico City, Mexico.

INTRODUCTION

The effects of glucose monitoring have been positive in controlled clinical trials, however, there is a lack of evidence about its effects in the real world, that is, in which patients are not in a controlled environment. The aim of the study was to analyze the glycemic behavior in the real world through the ambulatory glucose profile in men and women older than 18 years with a diagnosis of type 2 diabetes, with the use of CGM.

METHODS

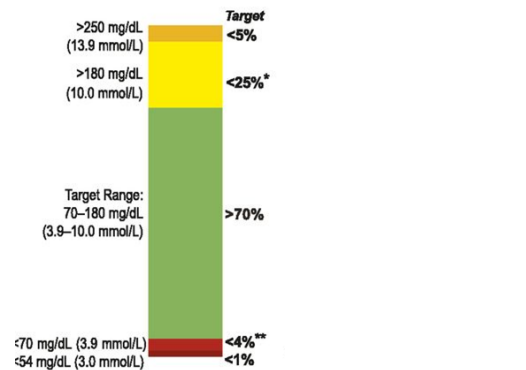
79 subjects with T2D using the FreeStyle Libre System were analyzed in their clinical setting. CGM data and clinical targets were determined.

RESULTS

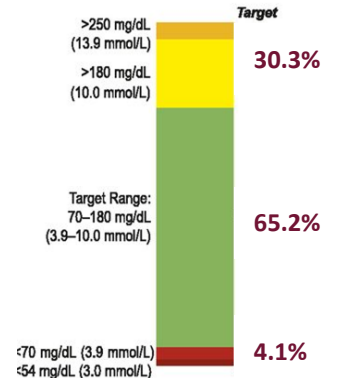
The mean age was 57.7 years, 64.5% women. Regarding the CGM data, the monitor active percentage was 76.9% (95% CI: 74.7-82.2); mean glucose 157 mg/dL (95% CI: 147.3-168.5); glucose management indicator 6.9% (95% CI: 6.7-7.2); glycemic variability 29.9% CV (95% CI: 28.1-31.8); TIR 65.2% (95% CI: 59.5-70.9); TAR 30.3% (95% CI: 24.3-36.3); TBR 4.1% (95% CI: 1.7-7.0); low glucose events 4.5 (95% CI: 2.9-6.1); mean readings at day 8.4 (95% CI: 6.6-10.3).

Figure 1: Comparison from Real World Data of the study and CGM-based targets

CGM-based targets for Type 2 Diabetes

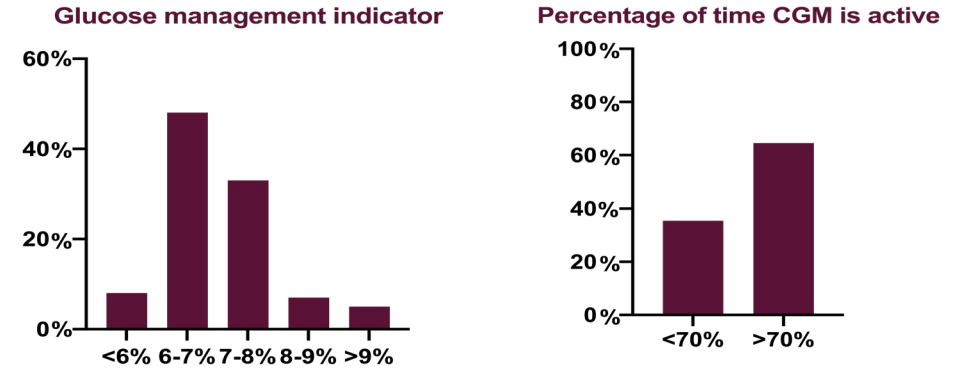


Data from our real world study



T, D[type , diabetes- TIR[Time in Range- TBR[time below range- TAR[time above range- CGM[continuous glucose monitoring.

Figure 2: Glucose management indicator and percentage of time CGM is active



DISCUSSION

Continuous Glucose Monitoring has been demonstrated to be clinically valuable, reducing risks of hypoglycemia and hyperglycemia, glycemic variability, and improving patient quality of life for a wide range of patient populations and clinical indications.

There is a need to combined the best parts of traditional randomized controlled trials and observational study designs to produce real-world evidence that provides adequate scientific evidence for regulatory decision-making.

In the present study, it was possible to identify that patients analyzed in a real clinical setting lack the desirable metabolic control, even when using CGM. The foregoing reinforces the need to establish real-world studies with a significant sample of patients, which allows measuring glycemic behavior in uncontrolled situations.

CONCLUSION

In people with T2D analyzed in their real clinical setting; glucose, TIR, TAR, and TBR are out of range. This increases the risk of micro and macrovascular complications. Our results are similar from those described in controlled clinical trials.