

**Gómez AM, Henao Carrillo DC, Imitola Madero A, Rondón M, Robledo Gómez MA, Muñoz O, Rebolledo M, García Jaramillo M, León Vargas F, Umpierrez GE**

**Introduction.**

Basal – bolus insulin regimen (BBIR) is recommended for patients with T2D hospitalized in general ward. Hypoglycemia with this therapy is low, but it is the main barrier in its implementation.

**Objetive.**

To assess efficacy and safety of BBIR using Continuous Glucose Monitoring (CGM) and determine the risk factors associated with hypoglycemia.

**Methods.**

Observational prospective cohort study with T2D patients treated with BBIR in general ward following 2017 American Diabetes Association guidelines. Time in range, hypoglycemia (< 70 mg/dl, <54 mg/dl), SD (standard deviation) and Coefficient of variation (CV%) were measured with CGM.

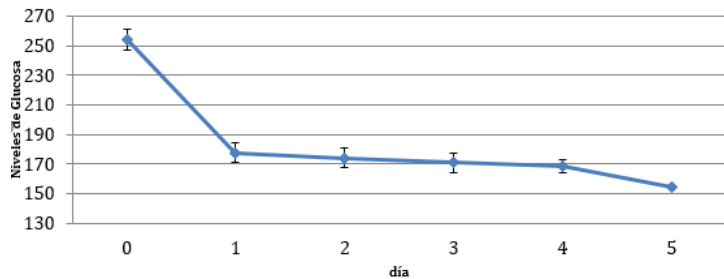
**Table 1.** Baseline characteristics.

Baseline characteristics of the population	
Age, mean (SD)	66,05 (8,55)
Diabetes duration time, mean (SD)	14,76 (8,98)
<b>Comorbidities, n (%)</b>	
Cardiovascular disease	11 (28,95)
Renal disease	14 (36,8)
<b>Outpatient treatment, n (%)</b>	
Metformina	18 (47)
Sulfonilureas	13 (34)
Gliptins	2 (5)
NPH insulin	14 (37)
Regular Insulin	15 (39)
Glargina Insulin	7 (18)
<b>Anthropometric measures, mean (SD)</b>	
Weigth	69,62 (14,13)
Body mass index	26,48 (4,86)
<b>Indication of hospitalization, n (%)</b>	
Hyperglycemia	7 (18,5)
Coronary heart disease	10 (26,3)
Infection	14 (36,84)
Others	3 (8,82)
<b>Admission laboratories, mean (SD)</b>	
Blood Glucose, mg/dl	251,68 (146,63)
A1c, %	9,26 (2,62)
Creatinine, mg/dl	1,19 (0,44)
<b>Hospitalization outcomes.</b>	
Duration of hospitalization in days, mean (SD)	15,36 (9,77)
Death during hospitalization, n (%)	2 (5)

**Results:**

38 patients were included. Baseline A1C was 9.26 ± 2.62%, mean blood glucose at admission was 254 ± 11 mg/dl (table 1). Percentage of time in range increased from 72.1% to 89.4% at the end of the study (figure 1).

**Figure 1.** Average glucose per day.



The event rate <70 mg/dl was 0.032 events/patient (table 2). Factors related with hypoglycemia (<70 mg/dl) were BMI (body mass index), mean glucose, SD and CV%. Per 1 unit of decrease in BMI and Per each 10 mg/dl of decrease of the mean glucose there was an increase in the incidence of hypoglycemia of 0.17 (p = 0.021) and 0.11 (p = 0.026) events, respectively. An increase of 10 units on the SD and CV%, increased the incidence of hypoglycemia on 0.45 (p = 0.012) and 0.74 (p = 0.015) events, respectively.

**Table 2.** Events of hypoglycemia

Events of hypoglycemia	< 70 mg/dl	< 54 mg/dl
Number of events, n	11	2
Night events, n	5	2
Area under the curve (AUC)	0,029	0,0059
Percentage of time (%)	0,263	0,048
Rate of events.	0,32	0,059

**Conclusion.**

BBIR in hospitalized patients with T2D is effective with low incidence of hypoglycemia. Increase of SD and CV%, as well as decrease in mean glucose and BMI were associated with events <70 mg/dl.

**References**

- American Diabetes Association. Standards of Medical care in diabetes - 2017. J Clin Appl Res Educ. 2017;40(January):1–142.
- Gomez AM, Umpierrez GE. Continuous Glucose Monitoring in Insulin-Treated Patients in Non-ICU Settings. J Diabetes Sci Technol [Internet]. 2014;8(5):930–6. Available from: <http://journals.sagepub.com/doi/10.1177/1932296814546025>
- Gómez AM, Umpierrez GE, Muñoz OM, Herrera F, Rubio C, Aschner P, et al. Continuous Glucose Monitoring Versus Capillary Point-of-Care Testing for Inpatient Glycemic Control in Type 2 Diabetes Patients Hospitalized in the General Ward and Treated With a Basal Bolus Insulin Regimen. J Diabetes Sci Technol [Internet]. 2016;10(2):325–9. Available from: <http://journals.sagepub.com/doi/10.1177/1932296815602905>