

The Glycemia Risk Index (GRI) is a better indicator of safety and therapeutic success (TS) than the coefficient of variation (CV): preliminary results from the CIRDIA-BFH study.

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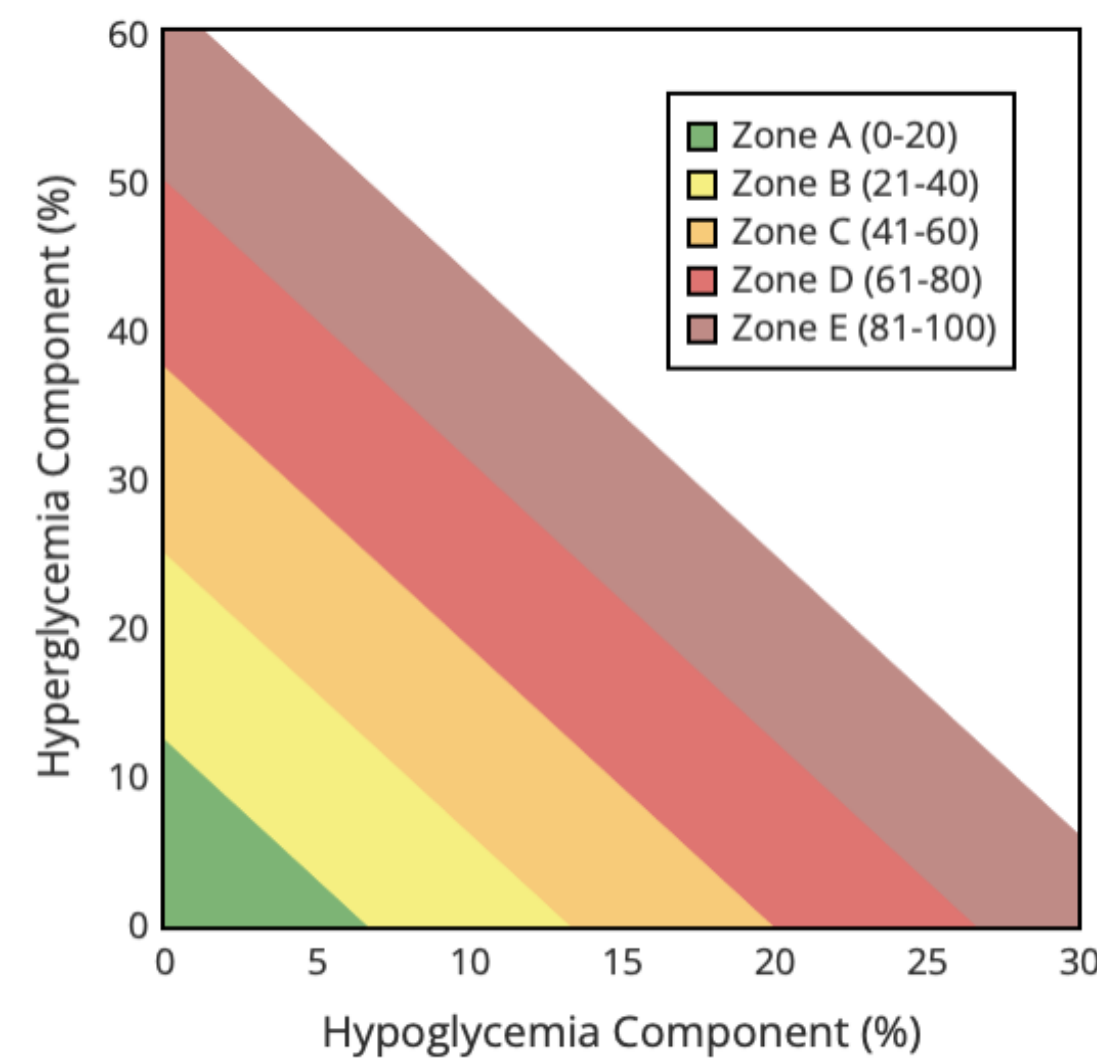


Background

- **The GRI (Glycemia Risk Index)** is a metric accounting for the hypo and hyperglycemia risk. [1]
It ranges from **0 (minimal risk)** to **100 (maximal risk)** and can be displayed on a GRI grid including 5 zones. [2]

- **Therapeutic Success (TS)** is defined as the combination of: [3]
Efficacy targets: TIR 70-180 > 70% and GMI < 7%
Safety targets: TBR < 70 < 4% and TBR < 54 < 1%

- **Thresholds & Predictors:**
GRI < 26 is a good threshold to identify people who achieve TS criteria. [4]
CV ≤ 36% is supposed to reflect safety and efficacy and is displayed in the ambulatory glucose profile. [5]



Aims

1. Is the prediction of TS by CV as good as the prediction of TS by GRI?
2. Is the threshold ≤ 36% for CV a good predictor of safety / GRI zone?

Methods

Preliminary results (M3) of the **CIRDIA-BFH study**, a rolling 12-month (M12) retrospective study including persons with T1D & hybrid closed loop (HCL) initiation in a CIRDIA site.

Adult patients who initiated HCL in a CIRDIA site were enrolled in 2025 after informed consent and non-opposition. The only exclusion criteria was pregnancy. Ambulatory glucose profiles were extracted from platforms at baseline (M0), M3, M6 and M12. These analyses were performed after **all participants had completed M3 timepoint**.

Results

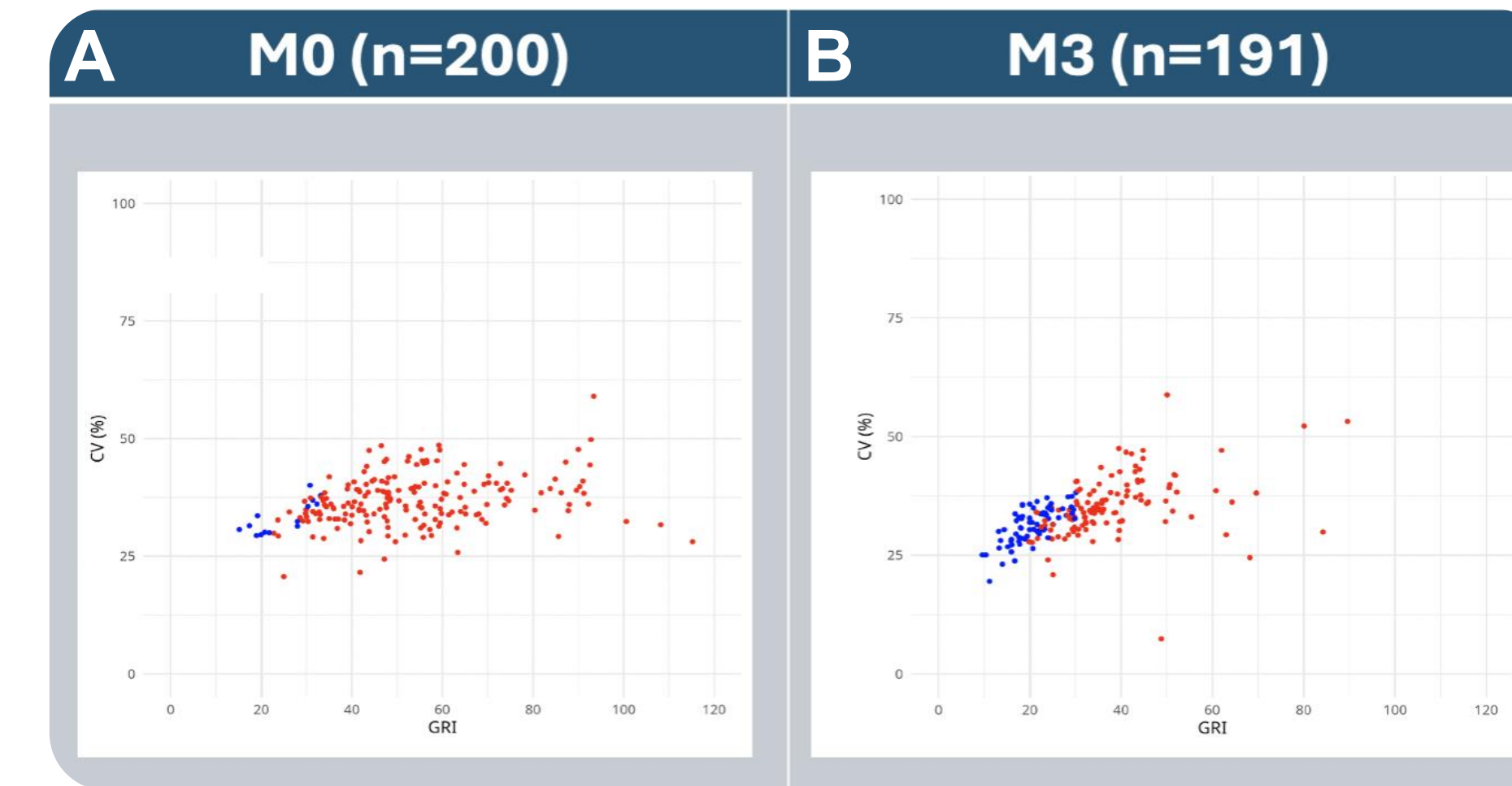
- **Study Population (n = 200)**
200 persons with T1D (64% women, 36% men) | Age: 44.7 ± 15.0 years | T1D duration: 22.5 ± 13.6 years | BMI: 26.4 ± 4.6 kg/m²
HCL Systems: Omnipod 5 (62.5%), Minimed 780G (22.5%), Control IQ (9.5%), CamAPS (5.5%)

GRI (M0 → M3) 51.9 ± 19.2 → 31.8 ± 13.4	CV (M0 → M3) 36.7 ± 5.4% → 34.0 ± 5.9%	TS (M0 → M3) 7.0% → 38.0%
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- **ALL participants who achieved TS had a GRI in safe zones (≤40, zones A and B)**
- **Predictor Accuracy (M0/M3/M6/M12 combined)**
CV ≤ 36% was NOT a good predictor of GRI zone (safety):
Accuracy: 73%
CV ≤ 36% was NOT a good predictor of TS:
Accuracy: 58%
GRI < 26 was a strong predictor of TS:
Accuracy: 89%

Prediction of therapeutic success at M0 and M3 according to GRI and CV

Therapeutic success
● : yes
● : no



Conclusion

- In people with T1D on CGM:**
- The **GRI value (<26) or zone (A-B)** is a **better predictor of TS** than CV.
 - Furthermore, a **CV threshold ≤ 36% is not a good predictor** of the GRI zone (= safety).
 - The **GRI value and GRI grid** should be **displayed on all CGM platforms**
 - An **alert set for GRI ≥26** could help the identification of patients requiring further education and support

References: [1] D. Klonoff et al. J Diabetes Sci Technol. 2023;17:1226-1242 ; [2] <https://www.diabetestechology.org/gri/> ; [3] P. Choudhary et al. Diabetes Technol Ther. 2024;26(S3):32-37; [4] S. Picard et al. Diabetes Metab. 2025 Mar;51(2):101617. doi: 10.1016 ; [5] T .Battelino et al. Diabetes Care. 2019;42:1593-1603

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