Changes in CGM Metrics for People with T2D Switching from Dulaglutide or Semaglutide to Tirzepatide 5mg A Sub-Analysis of The Surpass-Switch-2 Study

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OBJECTIVE

- This post-hoc analysis aimed to describe changes in continuous glucose monitoring (CGM) metrics after switching from dulaglutide or semaglutide to tirzepatide 5 mg in adults with type 2 diabetes (T2D).

CONCLUSION

- Baseline characteristics were similar between semaglutide and dulaglutide sub-groups, except for a larger percentage of females in the semaglutide sub-group.
- Switching from dulaglutide or semaglutide to tirzepatide 5 mg was associated with improved CGM metrics in both sub-groups.

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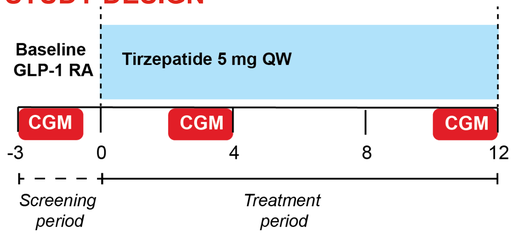
BACKGROUND

CGM and GLP-1 RAs

- CGM is used in the treatment of T2D to optimize and monitor glycemic variations.
- Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) improve glycemic control in participants with T2D, and studies have shown significant improvements in HbA1c levels when CGM is combined with GLP-1 RAs.[1]
- Tirzepatide is a GLP-1 and glucose-dependent insulinotropic polypeptide (GIP) RA approved for the treatment of T2D and obesity in the US and EU.
- Switching directly to tirzepatide 5 mg from GLP-1 RAs has shown improvements in CGM-measured glycemic control in SURPASS-SWITCH-2.[2]
- In adults with T2D, tirzepatide treatment has shown superior CGM-measured glycemic control compared with insulin degludec (SURPASS-3 CGM).[3]

STUDY DESIGN

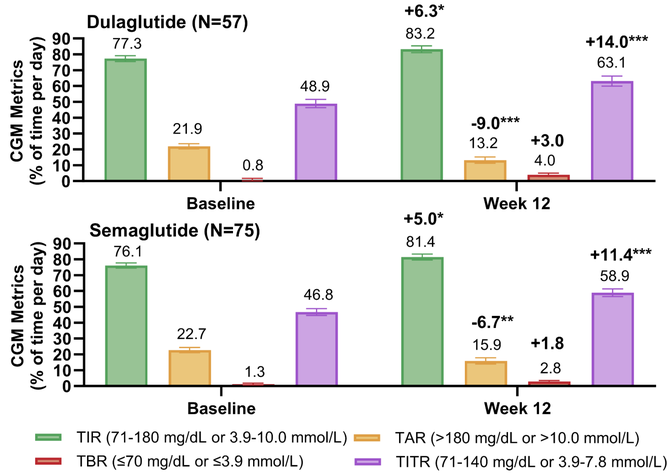


SURPASS-SWITCH-2

- Open-label, single-arm, Phase 4 study (N=152)
  - in adults with T2D, HbA1c ≥6.5% (≥48 mmol/mol) to ≤9.0% (≤75 mmol/mol), and BMI ≥25 kg/m^2,
  - on a stable dose of liraglutide (1.2 or 1.8 mg once daily), dulaglutide (0.75, 1.5, 3, or 4.5 mg once weekly) or semaglutide (0.5, 1, or 2 mg once weekly) for ≥3 months prior to initiation of tirzepatide 5 mg once weekly.
- Participants wore a blinded CGM sensor for 14 days with data collected at week 0, 4, and 12.
- This post-hoc analysis included participants on a stable dose of dulaglutide (N=63) or semaglutide (N=84)

KEY RESULT

TIR, TAR, and TITR improved significantly from baseline to week 12 in dulaglutide and semaglutide sub-groups. TBR was higher at week 12 but was not statistically significant compared to baseline.



*Numbers in bold are change from baseline (%). *p<0.05, **p<0.01, ***p<0.001 vs. baseline. Data are LSMean±SE, Efficacy Analysis Set.*

CGM Procedure

- The study-provided CGM sensor was the Abbot Libre Freestyle PRO**.**
- The CGM sensor was used in blinded mode during the study, and did not display glucose readings to the participant or investigator, or high and low glucose alerts to the participant.
- Participants wore the CGM sensor for a 14-day session during screening with data collected at the baseline visit before any study drug injection.
- Participants placed a new CGM sensor at home 2 weeks prior to Week 4 and Week 12 visits, when the data was downloaded.
- The compliance threshold was set at 70% (at least 10 days of the 14-day session) for each session. Participants with compliance <80% were re-educated on CGM operation and requirements.
- For participants with a non-compliant CGM session at Week 4, the CGM sensor was inserted during the study visit and replacement CGM data was collected no later than the next study visit at Week 8.
- No replacement CGM session was available at Week 12 as no additional study drug was administered beyond Week 12.
- CGM data was not used to assess the incidence of hypoglycemia.

Baseline Characteristics

Baseline Characteristics	Dulaglutide (N=63)	Semaglutide (N=84)
Age (years)	58.4±10.3	57.6±10.0
Females (n, %)	32 (50.8%)	48 (57.1%)
BMI (kg/m^2)	34.7±6.5	35.4±7.2
Waist Circumference (cm)	114.7±16.8	113.3±17.3
HbA1c (%)	7.5±0.7	7.4±0.7
FSG (mg/dL)	140.8±29.3	141.3±37.5
CGM Metrics (mean % of time per day)		
Time Above Range (TAR, >180 mg/dL or >10.0 mmol/L)	21.4±20.8	23.6±21.9
Time In Range (TIR, 71-180 mg/dL or 3.9-10.0 mmol/L)	77.6±20.6	74.9±21.2
Time Below Range (TBR, ≤70 mg/dL or ≤3.9 mmol/L)	1.0±2.3	1.6±5.1
Time In Tight Range (TITR, 71-140 mg/dL or 3.9-7.8 mmol/L)	49.4±25.4	44.6±23.7

Mean±SD, mITT

Overall Safety Profile

- Four participants in the total study population had 6 level 1 (<70 mg/dL or <3.9 mmol/L) and 3 level 2 (<54 mg/dL or <3.0mmol/L) hypoglycemic events following the first dose of tirzepatide 5 mg.
- There were no severe hypoglycemic events.
- One participant was withdrawn due to persistent hyperglycemia.

References

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3. Battelino T, Bergenstal RM, Rodríguez A, Fernández Landó L, Bray R, Tong Z, Brown K. *The Lancet Diabetes & Endocrinology* 2022; **10**(6): 407-17.

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