Higher derived time in range with insulin degludec/insulin aspart versus insulin glargine U100 in Japanese adults with T2D

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Methods

- BOOST® Japan (NCT0403-3896, NCT01272193) was a phase 3, open-label, treat-to-target trial of insulin-naive Japanese adults with T2D who were randomised to either IDegAsp (n=147) or IGlar U100 (n=149) (Figure 1). Both insulins were titrated to a target pre-breakfast self-measured plasma glucose of 3.9 to <5.0 mmol/L (70 to <90 mg/dL).
- Data from this trial were evaluated post hoc. Nine-point SMBG profiles were taken at weeks 0, 12, 16 and 26, with time points before breakfast, at lunch, dinner, 90 min after each meal, bedtime and 04:00, and before breakfast the next day.
- SMBG profiles with ≥6 readings were used to derive the proportion of available readings within dTIR: 3.9–10 mmol/L [70–180 mg/dL] (below derived time below range dTBR: <3.9 mmol/L [70 mg/dL]) or above (derived time above range dTAR: >10 mmol/L [>180 mg/dL]) target range.
- Estimated treatment differences (ETDs; IDegAsp–IGlar U100) for the change from baseline to end of treatment (EOT; week 26) in dTIR parameters were analysed by analysis of covariance, with treatment as a fixed effect and baseline response as a covariate.

Key results

- The changes from baseline to EOT were as follows, shown as ETD (95% confidence interval [CI]) (Figure 2):
  - For dTIR: 5.28% (1.21;9.35), p=0.0112
  - For dTBR: -0.12% (-1.54;1.30), p=0.8678
  - For dTAR: -5.13% (-9.08;1.30), p=0.0113
- Thus, the change in dTIR from baseline to EOT was significantly greater with IDegAsp versus IGlar U100.
- Change in dTBR from baseline to EOT did not differ between treatments.
- The proportions of patients achieving ≥70% dTIR at EOT with IDegAsp and IGlar U100, respectively, were 56.3% and 34.2%; the proportions achieving ≥70% dTIR without dTBR from baseline to EOT were 42.9% and 30.9%, respectively, and the proportions achieving a ≥5% increase in dTIR from baseline to EOT were 71.4% and 59.7%, respectively (Figure 3).

Conclusions

- IDegAsp was associated with significantly greater dTIR versus IGlar U100 without an increase in dTBR in insulin-naive patients with T2D.
- This highlights the clinical value of IDegAsp – a unique co-formulation that provides convenient dosing with postprandial glucose excursions without compromising fasting plasma glucose control or safety.