PO1-5-18 Poster session

Insulin analogues glargine 300 U/mL and 100 U/mL: The same active principle for two different drugs

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Background: Insulin gargine 300U/mL (Gla-300) forms a more compact subcutaneous depot with a reduced surface area compared to Gla-100, determining a lower re-dissolution rate. Methods: We report the main evidences from clinical studies and meta-analyses to compare PK/PD and clinical profile of Gla-300 vs Gla-100 in Diabetes Mellitus (DM). Results: Two Gla-300 PK/PD studies demostrate a more prolonged glycemic control and even activity with a lower within-/between-day intra-subject variability in exposure vs Gla-100. Consistent data emerge from a study comparing the two glycemic profile by Continuous-Glucose-Monitoring in Type1DM. A patient-level metana-analysis of 1-year data of the EDITION studies in Type2DM, comparing efficacy and safety of Gla-300 vs -100, demostrated a more sustained glycemic control in both groups and a higher A1c reduction for Gla-300 at 12 months: least squares (LS) meas change from baseline to month 12 was -0.91 (SE 0.03)% with Gla-300 and -0.8 (0.03)% with Gla-100. The LS mean difference for change in A1c between the groups was statistically significant. Fewer partecipants experienced &ge1 confirmed (&le3.9mmoL/L) or severe hypoglycemic event during the night (00:00-05:59h) (RR 0.85;95%CI: 0.77,0.92) and at any time of day (RR 0.94;95%CI: 0.9,0.98) with Gla-300 vs Gla-100. The annualized rates of hypoglycemia during the night were lower with Gla-300 vs Gla-100. The benefit of Gla-300 was seen during the night and beyond the pre-defined nocturnal period, for both the partecipants experiencing &ge1 confirmed or severe event and events/partecipant-year. These benefits are confirmed by a retrospective observational study in real-life regarding 881 patients with Type2DM switching to Gla-300 from other basal insulins: mean reduction in A1c levels from basline to follow-up (0-6 months) was 0.64% (8.97% vs 8.33%;95%CI: 0.45,0.84;P&lt0.0001). The reduction in A1c levels was seen as early as the first 3 months following Gla-300 initiation. Switching to Gla-300 from other basal insulins was associated with a 0.9% reduction in the subjects with hypoglycemia from baseline to follow-up (0-3 months) (6% vs 5.1%). Conclusions: Gla-300, due to a more compact depot, is associated with a more stable and prolonged PK/PD profile and a sustained glycemic control with a lower risk of hypoglycemia than Gla-100.