REAL-WORLD EVIDENCE DEMONSTRATES COMPARABLE CLINICAL OUTCOMES OF SWITCHING FROM INSULIN GLARGINE 100 U/ML (GLA-100) TO INSULIN GLARGINE 300 U/ML (GLA-300) VS INSULIN DEGLUDEC (IDEG) IN PATIENTS WITH TYPE 2 DIABETES (T2D)

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ABSTRACT

Background: We compared the clinical outcomes of patients who switched from insulin glargine 100 U/ml (GLA-100) to insulin glargine 300 U/ml (GLA-300) vs insulin degludec (IDeg) among individuals with type 2 diabetes (T2D) in the real-world setting.

Methods: In a real-world, retrospective, observational study, we compared the outcomes of patients who switched from insulin glargine 100 U/ml to 300 U/ml vs insulin degludec. The study was conducted in the US database. Eligible patients were selected based on T2D diagnosis and were propensity score matched 1:1 on baseline characteristics. Endpoints were A1C change and hypoglycemia event rate. All patients had at least 1 measurement of glycated hemoglobin A1c (A1C) level recorded during the 6-month baseline and follow-up periods.

Results: We identified 810 patients who switched from GLA-100 to GLA-300 (n = 583) vs 2,893 patients who switched to IDeg (n = 2,310). The incidence and event rate of hypoglycemia associated with hospitalization or ED visits during the 6-month follow-up were comparable between GLA-100 and IDeg switchers, with a comparable proportion of patients switching to GLA-300 experiencing hypoglycemia (4.9% baseline; 3.8% follow-up) vs IDeg switchers (5.4% baseline; 3.8% follow-up). All patients on GLA-300 and those on IDeg were equally likely to attain A1C < 7.0% (12.9% vs 15.9%, respectively; P = 0.88). The incidence and event rate of hypoglycemia associated with hospitalization or ED visits during the 6-month follow-up were comparable between GLA-100 and IDeg switchers, with a comparable proportion of patients switching to GLA-300 experiencing hypoglycemia (4.9% baseline; 3.8% follow-up) vs IDeg switchers (5.4% baseline; 3.8% follow-up). All patients on GLA-300 and those on IDeg were equally likely to attain A1C < 7.0% (12.9% vs 15.9%, respectively; P = 0.88).

Conclusions: In this first head-to-head analysis between the two second-generation basal insulin analogs in a real-world setting, we found comparable clinical outcomes of patients switching from insulin glargine 100 U/ml to insulin glargine 300 U/ml vs insulin degludec.

INTRODUCTION

The approval of insulin glargine 300 U/ml (GLA-300) and insulin degludec (IDeg) has provided new options for basal insulin therapy. The primary objective of our study was to compare the clinical outcomes of patients who switched from GLA-100 to GLA-300 vs IDeg in a real-world setting.

METHODS

Study Design:

We conducted a real-world, retrospective, observational study. The study was conducted in the US database. Eligible patients were selected based on T2D diagnosis and were propensity score matched 1:1 on baseline characteristics. Endpoints were A1C change and hypoglycemia event rate. All patients had at least 1 measurement of glycated hemoglobin A1c (A1C) level recorded during the 6-month baseline and follow-up periods.

Patient Selection:

Eligible patients were identified by ICD-9-CM/ICD-10-CM codes. The study population included adults with T2D who switched to GLA-300 or IDeg from using GLA-100 during 6 months to assess any imbalance before and after matching on individual baseline characteristics.

RESULTS

Patient Baseline Characteristics:

Compared with patients who switched to GLA-300, patients on IDeg were more likely to have diabetes complications, with a higher prevalence of hypertension (39.0% vs 31.0%, P = 0.002) and nephropathy (12.1% vs 9.0%, P = 0.049). BMI and CCI scores were similar in the 2 cohorts: 30.2 (12.4) vs 30.1 (12.2) and 1.19 (1.22) vs 1.22 (1.17), respectively.

Patient Selection and Matching:

The mean A1C levels and the proportion of patients with A1C measurements at both the 6-month baseline and 3-6 months’ follow-up were similar in both cohorts. The incidence of hypoglycemia was similar in the 2 cohorts: 0.6% vs 0.8%, respectively.

Outcome Assessments:

All patients had ≥ 1 measurement of glycated hemoglobin A1c (A1C) level recorded during the 6-month baseline and follow-up periods. A1C goal attainment: the proportion of patients reaching a prespecified A1C target < 7.0% (53 mmol/mol) and < 8.0% (64 mmol/mol) during the 6-month follow-up period; adjusted mean was 0.50 events/PPPY and 0.51 events/PPPY for GLA-300 and IDeg, respectively.

Adjusted Mean Hypoglycemia

Hypoglycemia: GLA-300 follow-up (n = 2,165) vs IDeg follow-up (n = 2,732). Both groups had a comparable incidence of hypoglycemia during the 6-month follow-up period; adjusted mean was 0.50 events/PPPY and 0.51 events/PPPY for GLA-300 and IDeg, respectively; P = 0.88. The incidence and event rate of hypoglycemia associated with hospitalization or ED visits during the 6-month follow-up were comparable between GLA-100 and IDeg switchers, with a comparable proportion of patients switching to GLA-300 experiencing hypoglycemia (4.9% baseline; 3.8% follow-up) vs IDeg switchers (5.4% baseline; 3.8% follow-up). All patients on GLA-300 and those on IDeg were equally likely to attain A1C < 7.0% (12.9% vs 15.9%, respectively; P = 0.88).

Figure 1: Adjusted Mean Hypoglycemia Event Rate (0.00 to 3.14 events/PPPY)**

Figure 2A: Hypoglycemia Incidence (≤1 vs >1 event).

Figure 2B: Hypoglycemia Incidence (≤1 vs >1 event).

Figure 3: Change in A1C From Baseline to Follow-Up.*

Figure 4: Adjusted Mean Hypoglycemia Event Rate (0.00 to 3.14 events/PPPY)**

Figure 5: A1C Goal Attainment.

REFERENCES


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CONCLUSION

In this first head-to-head analysis between the two second-generation basal insulin analogs in a real-world setting, we found comparable clinical outcomes of patients switching from insulin glargine 100 U/ml to insulin glargine 300 U/ml vs insulin degludec.