

Insulin glargine 300 U/mL reduces the risk of hypoglycaemia while achieving good glycaemic control

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Video Abstract

Keywords: University of Parma and Azienda Ospedaliera, Sanofi, Diabetes, Obesity and Metabolism basal insulin, glycaemic control, hypoglycaemia, type 2 diabetes, euglycaemia, insulin dosing, insulin glargine, Gla-300, Gla-100, EDITION, HbA1c, regression model, mealtime insulin, open label, phase 3a clinical trial, neutral protamine Hagedorn (NPH) insulin, metformin

Posted Date: September 20th, 2019

DOI: <https://doi.org/10.21203/rs.2.15014/v1>

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Abstract

A new report in Diabetes, Obesity and Metabolism suggests that insulin glargine 300 U/mL provides glycaemic control equivalent to that of insulin glargine 100 U/mL with less hypoglycaemia across a wide range of HbA1c levels in people with type 2 diabetes. Hypoglycaemia is a key factor limiting optimal glycaemic control in diabetes. In treating diabetes, glargine 300 has more stable and prolonged pharmacokinetic and pharmacodynamic profiles than glargine 100. Previous analysis of data from the EDITION 1, 2 and 3 clinical trials showed that this translated into less hypoglycaemia and comparable glycaemic control with glargine 300 relative to glargine 100. However, the analysis was unable to assess whether this reduced risk was limited to individuals with a particular HbA1c level, or whether it was achieved irrespective of the degree of glycaemic control attained. To address this question, researchers performed a patient-level, pooled analysis of 2496 participants with type 2 diabetes in the EDITION 1, 2, and 3 studies; patients were equally randomized to receive either glargine 300 or glargine 100. The rates of confirmed or severe hypoglycaemia over six months' treatment were modelled as a function of HbA1c at month 6. In this analysis, a significant inverse relationship between hypoglycaemia rate and HbA1c at 6 months was seen. No difference in this relationship was observed between glargine 300 and glargine 100 treatments. Participants treated with glargine 300 experienced a significantly lower rate of confirmed or severe hypoglycaemia at night compared with those treated with glargine 100, regardless of Hb1Ac at 6 months. This finding is generally consistent with the individual EDITION 1, 2 and 3 trials. For hypoglycaemia at any time of day, the pooled results seem driven mainly by the EDITION 2 and 3 trials, whereas the EDITION 1 and 2 trials appear to drive the results for hypoglycaemia at night. These variations may be due to study-specific differences in concurrent or prior insulin use. In the EDITION 1 study, participants were taking mealtime insulin in addition to basal insulin. Participants in the EDITION 3 trial were insulin-naïve prior to the study. Overall, the results suggest that treatment with glargine 300 versus glargine 100 could allow individuals with type 2 diabetes to achieve equivalent glycaemic control with less hypoglycaemia, or better glucose control with the same risk of hypoglycaemia, across a wide range of HbA1c levels.