

press release

Tresiba® (insulin degludec injection U-100) demonstrated significantly lower rates of overall, nocturnal and severe hypoglycaemia vs insulin glargine U-100

New Orleans, US, 11 June 2016 – New findings from the two phase 3b SWITCH trials showed that treatment with long-acting basal insulin Tresiba® (insulin degludec injection U-100) resulted in significantly lower rates of overall, nocturnal and severe hypoglycaemia compared with insulin glargine U-100.^{1,2} Results from the SWITCH 1 and 2 trials, the first completed double-blinded basal insulin studies evaluating the safety profile and efficacy of Tresiba® versus insulin glargine U-100,^{1,2} were presented today at the American Diabetes Association 76th Scientific Sessions in New Orleans, US.

In SWITCH 1, patients with type 1 diabetes taking Tresiba® compared with insulin glargine U-100 experienced: a rate reduction of 11% in overall symptomatic blood glucose (BG) confirmed hypoglycaemic episodes (95% confidence interval CI: 0.85; 0.94); a rate reduction of 36% in nocturnal BG confirmed symptomatic hypoglycaemic episodes (95% CI: 0.56; 0.73), and a rate reduction of 35% severe hypoglycaemia (95% CI: 0.48; 0.89) during the maintenance period.¹ All of the above analyses showed similar results in the full treatment period.

In SWITCH 2, patients with type 2 diabetes taking Tresiba® compared with insulin glargine U-100 experienced a rate reduction of 30% in overall BG confirmed symptomatic hypoglycaemic episodes (95% CI: 0.61; 0.80) and a rate reduction of 42% in nocturnal BG confirmed symptomatic hypoglycaemic episodes (95% CI: 0.46; 0.74). The above analyses showed significant results in the full treatment period. In the maintenance period, there was a trend towards lower rates of severe hypoglycaemia in favour of Tresiba® vs insulin glargine U-100. In the full treatment period, a significant 51% rate reduction in severe hypoglycaemia was observed in patients receiving Tresiba® vs insulin glargine U-100 (95% CI: 0.26; 0.94).²

“Hypoglycaemia is an ongoing challenge for people with type 1 and type 2 diabetes,” said Dr. Wendy Lane, lead SWITCH 1 study investigator and clinical endocrinologist at Mountain Diabetes and Endocrine Center in Asheville, N.C., U.S. “These findings are

important for the diabetes community, and add to the existing body of evidence for Tresiba®.”

Tresiba® (IDeg) was non-inferior to insulin glargine U-100 (IGlar) in reducing HbA_{1c} in both treatment periods for both SWITCH 1 and 2 trials.¹⁻³ (SWITCH 1 treatment period 1: IDeg 6.92% vs IGlar U-100 6.78%; SWITCH 1 treatment period 2: IDeg 6.95% vs IGlar U-100 6.97%; SWITCH 2 treatment period 1: IDeg 7.06% vs IGlar U-100 6.98%; SWITCH 2 treatment period 2: IDeg 7.08% vs IGlar U-100 7.11%).¹⁻³ The end-of-trial insulin doses were similar at the end of each treatment period in both trials. The most common adverse events (≥5%) included nasopharyngitis, upper respiratory tract infections and hypoglycemia.³⁻⁵

About SWITCH 1 and 2

The two phase 3b, 2x32-weeks randomised, double-blind, crossover, treat-to-target trials were initiated in January 2014 to compare the safety profile and efficacy of Tresiba® and insulin glargine U-100. The overall objective was to document the hypoglycaemia profile in type 1 diabetes and type 2 diabetes, respectively. During the maintenance period, the primary endpoint studied was the number of treatment emergent severe or BG confirmed symptomatic hypoglycaemic episodes. The two secondary endpoints included: the number of treatment emergent severe or BG confirmed nocturnal episodes and the proportion of subjects with one or more severe hypoglycaemic episodes. In SWITCH 1, 501 people with type 1 diabetes were randomised to crossover treatment with Tresiba® and insulin glargine U-100 in combination with insulin aspart. In SWITCH 2, 721 people with type 2 diabetes were randomised to crossover treatment with Tresiba® and insulin glargine U-100 in combination with oral antidiabetic drugs.

About hypoglycaemia

Hypoglycaemia is a frequent complication in people with type 1 and type 2 diabetes when low levels of blood glucose in the blood deprive muscles, cells and the brain of the energy needed to function.⁶ Hypoglycaemia can be triggered by multiple factors including taking too much insulin, not following the prescribed meal schedule or participating in unusually strenuous or prolonged exercise.

About Tresiba®

Tresiba® (insulin degludec injection U-100) is a once-daily basal insulin that provides a duration of action beyond 42 hours.^{7,8} It is important for people with type 1 and type 2 diabetes to establish a routine for insulin treatment. On occasions when administration at the same time of day is not possible, Tresiba® allows for flexibility in day-to-day dosing time when needed.^{7,9,10} Tresiba® received its first regulatory approval in September 2012 and has since been approved in more than 60 countries globally. It was most recently approved by the FDA in the United States on 26 September 2015.

About Novo Nordisk

Novo Nordisk is a global healthcare company with more than 90 years of innovation and leadership in diabetes care. This heritage has given us experience and capabilities that also enable us to help people defeat other serious chronic conditions: haemophilia, growth disorders and obesity. Headquartered in Denmark, Novo Nordisk employs approximately 41,600 people in 75 countries and markets its products in more than 180 countries. For more information, visit novonordisk.com, [Facebook](#), [Twitter](#), [LinkedIn](#), [YouTube](#).

Further information

Media:

Katrine Sperling	+45 4442 6718	krsp@novonordisk.com
Åsa Josefsson	+45 3079 7708	aajf@novonordisk.com
Michael Bachner (US)	+1 609 664 7308	mzyb@novonordisk.com

Investors:

Peter Hugrefte Ankersen	+45 3075 9085	phak@novonordisk.com
Melanie Raouzeos	+45 3075 3479	mrz@novonordisk.com
Kasper Veje (US)	+1 609 235 8567	kpvj@novonordisk.com

References

1. Lane W, Bailey T, Gerety G, *et al.* SWITCH 1: Reduced Hypoglycaemia With Insulin Degludec (IDeg) vs Insulin Glargine (IGlar), both U100, in Patients With T1D at High Risk of Hypoglycaemia: A Randomised, Double-Blind Crossover Trial. Abstract 87-LB presented at the 76th Annual Scientific Sessions of the American Diabetes Association (ADA), New Orleans, USA. 11 June 2016.
2. Wysham C, Bhargava A, Chaykin L, *et al.* SWITCH 2: Reduced Hypoglycaemia With Insulin Degludec (IDeg) vs Insulin Glargine (IGlar), both U100, in Patients With T2D at High Risk of Hypoglycaemia: A Randomised, Double-Blind Crossover Trial. Abstract 90-LB presented at the 76th Annual Scientific Sessions of the American Diabetes Association (ADA), New Orleans, USA. 11 June 2016.
3. Novo Nordisk. Data on file.
4. Lane W, Bailey T, Gerety G, *et al.* SWITCH 1: Reduced Hypoglycaemia With Insulin Degludec (IDeg) vs Insulin Glargine (IGlar), both U100, in Patients With T1D at High Risk of Hypoglycaemia: A Randomised, Double-Blind Crossover Trial. Poster (#87-LB) presented at the 76th Annual Scientific Sessions of the American Diabetes Association (ADA), New Orleans, USA. 11 June 2016.
5. Wysham C, Bhargava A, Chaykin L, *et al.* SWITCH 2: Reduced Hypoglycaemia With Insulin Degludec (IDeg) vs Insulin Glargine (IGlar), both U100, in Patients With T2D at High Risk

- of Hypoglycaemia: A Randomised, Double-Blind Crossover Trial. Poster (#90-LB) presented at the 76th Annual Scientific Sessions of the American Diabetes Association (ADA), New Orleans, USA; 11 June 2016.
6. Willis WD, Diago-Cabezudo JI, Madec-Hily A, *et al.* Medical resource use, disturbance of daily life and burden of hypoglycemia in insulin-treated patients with diabetes: results from a European online survey. *Expert Review of Pharmacoeconomics & Outcomes Research.* 2013; 13:123-30.
 7. EMA. Tresiba® summary of product characteristics. Available at: http://www.ema.europa.eu/docs/en_GB/document_library/EPAR_-_Product_Information/human/002498/WC500138940.pdf Last accessed: June 2016.
 8. Haahr H, Heise T. A review of the pharmacological properties of insulin degludec and their clinical relevance. *Clinical Pharmacokinetics.* 2014; 53:787-800.
 9. Meneghini L, Atkin SL, Gough SC, *et al.* The efficacy and safety of insulin degludec given in variable once-daily dosing intervals compared with insulin glargine and insulin degludec dosed at the same time daily: a 26-week, randomized, open-label, parallel-group, treat-to-target trial in individuals with type 2 diabetes. *Diabetes Care.* 2013; 36:858-864.
 10. Mathieu C, Hollander P, Miranda-Palma B, *et al.* Efficacy and safety of insulin degludec in a flexible dosing regimen vs insulin glargine in patients with type 1 diabetes (BEGIN: Flex T1): a 26-week randomized, treat-to-target trial with a 26-week extension. *The Journal of Clinical Endocrinology & Metabolism.* 2013; 98:1154-1162.