This policy statement is approved by Halton, Knowsley, Liverpool, South Sefton, Southport and Formby, St Helens, Warrington, West Lancashire, and Wirral CCGs

Ha Kn Li SS SF SH Wa WL Wi

NHS
Pan Mersey
Area Prescribing Committee

INSULIN DEGLUDEC 100units/mL and 200 units/mL solution for subcutaneous injection (Tresiba®) for type 1 and type 2 diabetes

The Pan Mersey Area Prescribing Committee recommends the prescribing of INSULIN DEGLUDEC 100units/mL and 200 units/mL solution for subcutaneous injection (Tresiba®), initiated by specialists only, for type 1 and type 2 diabetes for specific patient groups, taking into account NICE guidance

AMBER following specialist initiation

For the management of type 1 diabetes in adults, insulin detemir and insulin glargine remain first line options for basal insulin in accordance with NICE NG17[1]. For the management of type 2 diabetes, NPH insulin remains the first line option with insulin detemir and insulin glargine as second line options in accordance with NICE NG28[2]. Insulin degludec can be considered as an alternative in patients who meet one or more of the following criteria:

- Experience recurrent hypoglycaemic episodes despite optimisation of their current regime;
- Require large doses of basal insulin and would benefit from a higher strength preparation;
- Require flexibility in the timing of their basal insulin (e.g. shift workers);
- Experience recurrent diabetic ketoacidosis (DKA) due to variable insulin compliance (type 1 diabetes only);
- Experience allergic reactions to other basal insulins.

Children and young people with type 1 diabetes should initially be offered the multiple daily injection basal bolus regime in accordance with NICE NG18[3]. Insulin degludec can be considered for the basal insulin in children who meet one or more of the following criteria:

- Have high insulin requirements to reduce lipodystrophy and improve adherence;
- Demonstrate poor adherence with insulin injections to reduce the risk of diabetic ketoacidosis;
- Experience recurrent diabetic ketoacidosis due to variable insulin compliance;
- Experience pain with injecting insulin glargine due to its acidity (insulin degludec has a neutral pH);
- Experience erratic glycaemic control to reduce the risk of hypoglycaemia and ketoacidosis;
- Experience recurrent hypoglycaemic episodes despite optimisation of their current regime;
- Require flexibility in the timing of their basal insulin;
- As an alternative to an insulin pump if the child does not wish to wear one;
- Experience allergic reactions to other basal insulins.

Insulin degludec should be initiated by a specialist in diabetes management. The initial prescribing should be undertaken by the specialist before transfer to primary care, in accordance with current Pan Mersey guidance.

The annual cost of treatment with insulin degludec based on administration of 30-60 units per day excluding sundries is £340 to £680.

Note: Patients who are not eligible for treatment under this statement may be considered on an individual basis where their GP or consultant believes exceptional circumstances exist that warrant deviation from the rule of this policy. In this situation, follow locally defined processes.

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Effectiveness

Insulin degludec is an ultra-long-acting basal insulin which is non-inferior to insulin glargine in the management of both type 1 and type 2 diabetes in adults[4, 5]. Insulin degludec has also demonstrated similar glycaemic control in head-to-head comparison with Toujeo® in type 2 diabetes[6]. The safety and efficacy of insulin degludec has been demonstrated in children aged between 1 and 17 years[7] and is licensed for use from age 1 year.

The superiority of insulin degludec over insulin glargine in reducing the frequency of hypoglycaemic episodes in type 1 diabetes was demonstrated in the SWITCH 1 trial (RR 0.89, p<0.001 for superiority) including nocturnal hypoglycaemia (RR 0.64, p<0.001 for superiority)[8]. In type 2 diabetes, the SWITCH 2 trial showed that insulin degludec was superior to glargine in reducing hypoglycaemic events (RR 0.7, p<0.001) and reducing nocturnal hypoglycaemic episodes (RR 0.58, p<0.001)[9].

Data from the DEVOTE trial demonstrated the equivalent cardiovascular safety of insulin degludec compared to insulin glargine[10].

Safety

The most frequently reported adverse reaction during treatment is hypoglycaemia. In line with other insulins, insulin degludec is known to cause hypersensitivity and injection site reactions, urticaria, lipodystrophy and peripheral oedema. There is an increased risk of heart failure if insulin degludec is co-administered with pioglitazone. Consult the SPC for further details.

Insulin degludec is available as two strengths (100 units/mL and 200 units/mL). Care should be exercised when prescribing, supplying and administering insulin degludec to ensure the patient receives the correct strength.

Insulin should always be prescribed by brand name to reduce confusion. Refer to INSULIN: reducing errors in prescribing and administration (Pan Mersey APC, 2019) for further safety information.

Cost

Annual cost of treatment using pre-filled pens or cartridges based on administration of 30-60* units per day[11]:

Insulin degludec (Tresiba®) - £340 to £680
Insulin detemir (Levemir®) - £307 to £613
Insulin glargine (Lantus®) - £276 to £551
Insulin glargine (Abasaglar®) - £258 to £515
Insulin glargine (Semglee®) - £219 to £438
Insulin glargine (Toujeo®) - £269 to £537
Isophane insulin - £139 to £317

**does not imply dose equivalence between insulins. Prices exclude sundries.*

Patient factors

When switching from another insulin to insulin degludec, a change in dosage may be required. Post-hoc analysis from the SWITCH 1 and SWITCH 2 trials suggested a lower basal dose of insulin degludec was required compared to insulin glargine[8,9]. As a result, insulin degludec is not directly interchangeable with other basal insulins.

Prescribing information

Insulin degludec should be initiated under specialist supervision to determine the most appropriate dose for the patient.

Implementation notes

Insulin degludec should not be considered a first line insulin in patients with either type 1 or type 2 diabetes, however it can be initiated in patients who meet the criteria above, either following problems with other basal insulins or as initial treatment if a specialist feels that this is appropriate.

In type 2 diabetes, short term blood glucose monitoring may be considered for the purposes of education and rapid dose titration.

References

1. National Institute for Health and Care Excellence. NICE Guideline 17: Type 1 diabetes in adults: diagnosis and management; August 2015, last updated July 2016. Accessed 25 November 2019.
2. National Institute for Health and Care Excellence. NICE Guideline 28: Type 2 diabetes in adults: management; December 2015, last updated August 2019. Accessed 25 November 2019.
3. National Institute for Health and Care Excellence. NICE Guideline 18: Diabetes (type 1 and type 2) in children and young people: diagnosis and management; August 2015, last updated November 2016. Accessed 25 November 2019.
4. Heller, S *et al.* Insulin degludec, an ultra-longacting basal insulin, versus insulin glargine in basal-bolus treatment with mealtime insulin aspart in type 1 diabetes (BEGIN Basal-Bolus Type 1): a phase 3, randomised, open-label, treat-to-target non-inferiority trial. The Lancet, 2012; Volume 379, No. 9825, p1489–1497.
5. Garber, AJ *et al*. Insulin degludec, an ultra-longacting basal insulin, versus insulin glargine in basal-bolus treatment with mealtime insulin aspart in type 2 diabetes (BEGIN Basal-Bolus Type 2): a phase 3, randomised, open-label, treat-to-target non-inferiority trial. The Lancet, 2012; Volume 379, No. 9825, p1498–1507.
6. Cheng, AYY *et al*. Similar glycemic control and less or comparable hypoglycemia with insulin glargine 300U/mL vs. degludec 100U/mL in insulin-naïve T2DM on antihyperglycemic drugs ± GLP-1 RAs; The BRIGHT Randomized Study. Diabetes, 2018; Volume 67, No. 1.
7. Thalange, N *et al.* Insulin degludec in combination with bolus insulin aspart is safe and effective in children and adolescents with type 1 diabetes. Pediatric Diabetes, 2015; Volume 16, No. 3, p164-176.
8. Lane, W *et al*. Effect of insulin degludec vs insulin glargine U100 on hypoglycemia in patients with type 1 diabetes; The SWITCH 1 Randomized Clinical Trial. JAMA, 2017; Volume 318, No. 1, p33-44.
9. Wysham, C *et al*. Effect of insulin degludec vs insulin glargine U100 on hypoglycemia in patients with type 2 diabetes; The SWITCH 2 Randomized Clinical Trial. JAMA, 2017; Volume 318, No. 1, p45-56.
10. Marso, SP et al. Efficacy and safety of degludec versus glargine in type 2 diabetes. NEJM, 2017; Volume 377, p723-732.
11. NHS Business Services Authority. Dictionary of medicines and devices (dm+d). Accessed 25 November 2019.