

Benefits of detemir over isophane insulin add up over time in T1DM

Results presented at the Annual Meeting of the European Association for the Study of Diabetes suggest that insulin detemir may provide benefits over isophane insulin suspension [NPH insulin] in the treatment of patients with type 1 diabetes mellitus (T1DM).

Insulin detemir was compared with isophane insulin, as the basal component of basal-bolus therapy in T1DM, in a meta-analysis* involving three trials. Data were assessed from a total ITT population of 1555 patients who received detemir or isophane formulations, either once daily in addition to soluble insulin for 26 weeks (1 trial) or twice daily in addition to insulin aspart for 16 weeks.

At treatment completion, insulin detemir was associated with an overall mean decrease in HbA_{1c} level of 0.47%, compared with a decrease of 0.34% with isophane insulin ($p = 0.006$ between groups). Furthermore, fasting plasma glucose decreased from baseline by a significantly greater amount with insulin detemir than with isophane insulin (decreases of 1.6 vs 0.2 mmol/L). Notably, there was a mean 0.1kg decrease in body weight with insulin detemir, whereas this parameter increased by 0.5kg with isophane insulin ($p < 0.0001$ between groups).¹

Long term benefits predicted

A computer simulation model* using data from this meta-analysis predicted insulin detemir to provide increased long-term benefits, compared with isophane insulin. Insulin detemir was associated with increased life expectancy, and increased quality-adjusted life expectancy, compared with isophane insulin, overall. Delayed times to onset of diabetes-related complications, including microvascular and macrovascular complications, end-stage renal disease and cardiovascular disease, were also predicted with detemir, relative to isophane. In addition, the projected cumulative incidences of most diabetes-related complications were reduced with detemir, relative to isophane²

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1. Larsen JJ, et al. Insulin detemir provides superior glycaemic control compared with NPH insulin. *Diabetologia* 50 (Suppl. 1): 393-394 (plus poster) abstr. 0956, Sep 2007.

2. Kotchie RW, et al. Long-term clinical outcomes of insulin detemir versus NPH based basal-bolus therapy for type 1 diabetes patients in Germany: a modeling analysis using results from a meta-analysis of three clinical trials. *Diabetologia* 50 (Suppl. 1): 431-432 (plus poster) abstr. 1043, Sep 2007.