



Title	Long-Acting Insulin Analogues for Diabetes Mellitus: Meta-Analysis of Clinical Outcomes and Assessment of Cost Effectiveness
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Aim

To evaluate the clinical efficacy and economic implications of long-acting insulin analogues (LAIAs), specifically insulin glargine (IGlar) and insulin detemir (IDet), in treating diabetes mellitus (DM).

Conclusions and results

The evidence suggests that LAIAs have not demonstrated clinically important differences in glycated hemoglobin, a widely used marker of blood sugar control in types 1 and 2 DM. Evidence also suggests IGlar can reduce the risk of severe hypoglycemia in type 1 DM patients taking human insulin. IGlar reduced the risk of nocturnal, but not severe, hypoglycemia in type 2 DM patients. IDet has demonstrated a reduced risk of severe and nocturnal hypoglycemia in type 1 DM. No reductions in complications with IDet were observed in patients with type 2 DM. Publicly funding LAIAs will require significant additional investment. Economic arguments for this investment are limited, largely because they are based on unproven assumptions about the long-term benefit of therapy.

Methods

A systematic review and a meta-analysis were undertaken to evaluate the clinical and economic implications of using long-acting analogues in treating DM, relative to human insulin and to oral antidiabetic agents. Meta-analysis was performed using trials that completely reported data. The budget impact to publicly funded provincial drug plans was also examined.

Further research/reviews required

Long-term comparative studies of high quality are needed to definitively determine the benefit and harm of long-acting insulin analogues compared with conventional insulins.