

The cost-effectiveness of IDegLira, IGlaxLixi and liraglutide or lixisenatide added to basal insulin in patients with uncontrolled type 2 diabetes mellitus in Estonia

Summary

Objectives: Insulin degludec/liraglutide (IDegLira) and insulin glargine/lixisenatide (IGlarLixi) both contain basal insulin and GLP-1 receptor agonist in a single pen injection device. The aim of present analysis is to assess the clinical effectiveness and cost-effectiveness of IDegLira, IGlaxLixi and liraglutide or lixisenatide added to basal insulin, compared to basal-bolus therapy for the treatment of adult patients with type 2 diabetes mellitus uncontrolled on basal insulin.

Methods: Literature reviews of evidence on the effectiveness, safety and cost-effectiveness of GLP-1 receptor agonists, basal insulin, IDegLira and IGlaxLixi were carried out in relevant databases. Cost-effectiveness analysis was performed using the CORE Diabetes Model version 9.0. Data on baseline cohort characteristics, effectiveness and quality of life were obtained from published literature. Costs were calculated based on Estonian data and expert opinions. The analysis was conducted from the perspective of the Estonian Health Insurance Fund. In the base case scenario lifetime perspective was used (40 years). Costs and effects were discounted using an annual discount rate of 5%. Results are presented in terms of costs, QALYs and incremental cost-effectiveness ratio (ICER).

Results: The cost-effectiveness results suggest that in the base-case scenario treatment with IDegLira and IGlaxLixi enable to gain 0,043 and 0,033 QALYs, respectively, compared to basal-bolus therapy. Respective ICER is estimated at €31,625 per QALY for IDegLira, €676 per QALY for IGlaxLixi and €65,930 per QALY for liraglutide added to basal insulin in separate devices. Lixisenatide added to basal insulin in separate devices was dominant (more effective and less costly compared with basal-bolus therapy). The results were most influenced by the prices of drugs and shortening of the time horizon of the analysis.

Conclusions: The cost-effectiveness analysis showed that improvements in glycaemic control associated with GLP-1 receptor agonist and basal insulin use led to a reduced incidence of diabetes-related complications and a slightly longer (quality-adjusted) life expectancy. Overall, liraglutide and lixisenatide added to basal insulin, IDegLira, IGlaxLixi and basal-bolus therapy were quite similar in terms of QALYs and costs over the 40-year time horizon.

Citation: Juus E, Volke V, Roosimaa M, Lutsar K, Kiivet R-A. *GLP-1 retseptori agonisti ja insuliini sisaldavate kombinatsioonravimite kliiniline tõendus põhjus ja kulutõhusus*. Tartu: Tartu Ülikooli peremeditsiini ja rahvatervishoiu instituut; 2017.