

The clinical effectiveness and cost-effectiveness of GLP-1 receptor agonists for the treatment of type 2 diabetes mellitus in Estonia.

Summary

Objectives: To assess the clinical effectiveness and cost-effectiveness of GLP-1 receptor agonists (once-daily liraglutide 1,8 mg and 1,2 mg, lixisenatide 20 µg, twice-daily exenatide 10 µg and once-weekly exenatide 2 mg, dulaglutide 1,5 mg, albiglutide 50 mg) for the treatment of adult patients with type 2 diabetes mellitus.

Methods: Literature reviews for evidence on the effectiveness, safety and cost-effectiveness of GLP-1 receptor agonists 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 was 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. The time horizon was set to patient lifetimes in the base case (43 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 once-daily liraglutide 1,2 mg is the most widely used GLP-1 receptor agonist in Estonia. In the base-case scenario once-daily liraglutide 1,2 mg was more effective and less expensive compared to albiglutide, lixisenatide and once-daily exenatide. Liraglutide 1,8 mg and dulaglutide were more effective and expensive and once-weekly exenatide was more effective and less costly than liraglutide 1,2 mg.

Overall, GLP-1 receptor agonists were quite similar in terms of total costs and quality-adjusted life expectancy over patient's lifetime. Once the dominated alternatives were removed, the ICER was calculated in comparison of liraglutide 1,8 mg, dulaglutide and once-weekly exenatide. Compared liraglutide 1,8 mg to dulaglutide, the ICER was €184,484 per QALY. Compared dulaglutide to once-weekly exenatide the ICER was €259,345 per QALY. The results were most influenced by the prices of GLP-1 receptor agonists and shortening the time horizon of the analysis.

Conclusions: Current long-term modelling analysis found that using once-weekly exenatide is associated with the largest QALY gain for money compared to other GLP-1 receptor agonists.

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