Assessing Cost-Effectiveness in Diabetes Management: A US Healthcare Payer's Perspective on 15mg Tirzepatide Versus 1mg Semaglutide

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OBJECTIVE

This study aims to evaluate the cost-effectiveness of 15mg tirzepatide compared to 1mg semaglutide in managing type-2 diabetes (T2D) over 40 weeks, based on the SURPASS-2 trial, from a US healthcare payer's perspective.

BACKGROUND

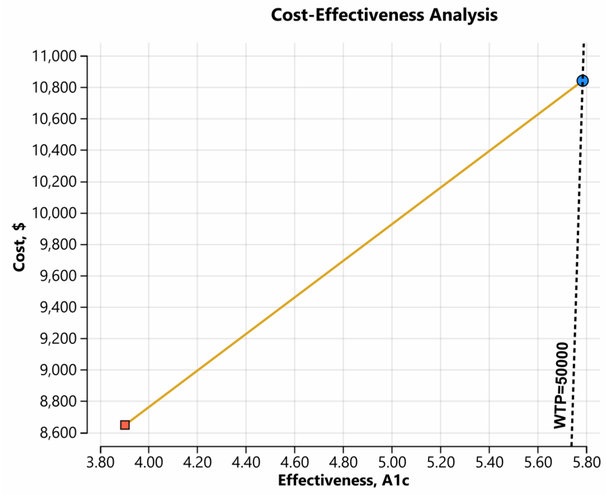
Approximately one in ten Americans now live with diabetes, a condition tightly intertwined with obesity and representing a substantial economic burden. In 2023, the American Diabetes Association (ADA) underscored the effectiveness of GLP-1 receptor agonists, including semaglutide and tirzepatide, by endorsing them as front-line options for managing blood glucose and weight in obese T2D patients.

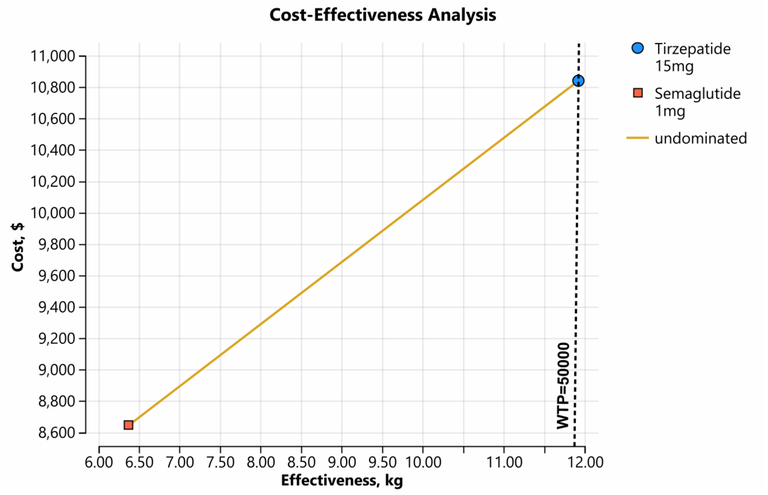
METHODS

The study utilizes a decision tree model to analyze data from the SURPASS-2 trial over 40 weeks, focusing on A1c reduction and weight loss. This model includes real-world clinical data, evaluating treatment efficacy, side effects, and patient adherence. Cost calculations consider direct medical costs, including the medications' wholesale acquisition cost and side effects treatment. The analysis used the Incremental Cost-Effectiveness Ratio (ICER) as the primary endpoint.

RESULTS

Over 40 weeks, treatment with tirzepatide 15 mg was estimated to be more costly than semaglutide 1 mg, with incremental costs of $2,195. The ICER for tirzepatide 15 mg compared with semaglutide 1 mg, based on an incremental A1c reduction of 0.45% from SURPASS-2, was $1,165 per 1% reduction in A1c and was $395.5 per 1 kg body weight loss based on an incremental bodyweight loss of 5.5 kg.





CONCLUSION

Tirzepatide 15mg demonstrated greater efficacy but higher costs than semaglutide 1mg. The ICER suggests that tirzepatide may be a cost-effective option if the willingness-to-pay threshold is higher than its ICER values for both HbA1c reduction and weight loss.

Despite its higher upfront costs, the significant benefits in controlling blood sugar and weight loss suggest that tirzepatide is a valuable treatment for overweight or obese patients with poorly controlled diabetes. Tirzepatide's role in healthcare should be considered for its short-term and long-term impacts on healthcare budgets and patient outcomes.