

Dapagliflozin is cost-effective compared to DPP-4 inhibitors in the treatment of type 2 diabetes mellitus in the Netherlands

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Background: In the Netherlands, dapagliflozin is currently reimbursed as dual or triple therapy in combination with metformin with or without sulfonylurea for patients with type 2 diabetes. While the use of SGLT2 inhibitors such as dapagliflozin is until now limited in the Netherlands, the use of DPP-4 inhibitors is more common and rising. This study compares the cost-effectiveness of dapagliflozin versus DPP-4 inhibitors when added to metformin and sulfonylurea in the treatment of type 2 diabetes.

Methods: A cost–utility analysis is performed with the Cardiff diabetes model based on ‘UK Prospective Diabetes Study 68’ risk equations. In line with Dutch pharmacoeconomic guidelines, a societal perspective, discounting 4% for costs, 1.5% for effects, and a 40-year time horizon are used.

Results: Using dapagliflozin results in a €990 cost saving and a 0.28 quality-adjusted life year gain over 40 years compared with DPP-4 inhibitors. This is mainly due to a lower incidence of micro- and macrovascular complications, delayed insulin treatment, and improved quality of life, partially due to lower BMI. Results are robust to changes in input parameters, including a potential price decrease of DPP-4 inhibitors due to expected generic entry. When the willingness-to-pay is €20,000 per quality-adjusted life year, the probability of dapagliflozin being cost-effective compared with DPP4-inhibitors is 99.9%.

Discussion:

Adding dapagliflozin instead of a DPP-4 inhibitor to metformin and sulfonylurea saves costs while improving outcomes. Sensitivity analyses show uncertainty around this outcome is low. Recent studies with dapagliflozin show that apart from the glucose lowering effect it also has a clinically significant effect on cardio-renal outcomes that starts soon after treatment initiation. This drives the position of SGLT2 inhibitors more and more towards the start of the treatment pathway, as mono or add on to any other glucose lowering drug. The corresponding economic value needs to be studied in a separate economic evaluation based on these cardio-renal outcome studies.