Cost-effectiveness of dapagliflozin in chronic heart failure: an analysis from the Australian healthcare perspective

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Background:
The Dapagliflozin and Prevention of Adverse Outcomes in Heart Failure (DAPA-HF) trial demonstrated that dapagliflozin reduced heart failure hospitalisations and mortality in patients with established heart failure, regardless of diabetic status.

Purpose:
To assess the cost-effectiveness of dapagliflozin in addition to standard care versus standard care alone in patients with chronic heart failure, from the perspective of the Australian public healthcare system.

Methods:
A Markov model populated with 1000 hypothetical individuals was constructed based on the DAPA-HF trial to assess the clinical outcomes and costs of patients with established heart failure and reduced ejection fraction over a lifetime time horizon. The model consisted of three health states: ‘Alive and event-free’, ‘Alive after non-fatal hospitalisation for heart failure’ or ‘Dead’. Costs and utilities were estimated from published sources. Outcomes of interest were the incremental cost-effectiveness ratios (ICERs) in terms of cost per quality-adjusted life year (QALY) gained and cost per year of life saved (YoLS). All outcomes were discounted at a rate of 5% annually.

Results:
Over a lifetime analysis, addition of dapagliflozin to standard care in patients with chronic heart failure prevented 88 acute heart failure hospitalisations (including readmission), and saved 416 (discounted) years of life and 288 (discounted) QALYs, at an additional cost of A$3,692,440 or €2,263,204 (discounted). This resulted in ICERs of A$8,875 (€5,439) per YoLS and A$12,482 (€7,650) per QALY gained, well below the Australian arbitrary willingness-to-pay threshold of A$50,000 (€30,645).

Conclusion:
From the Australian public healthcare perspective, dapagliflozin is cost-effective when used as an adjunct therapy to standard care compared to standard care alone for the treatment of chronic heart failure with reduced ejection fraction.