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## Original Investigation

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# Cost-effectiveness of Empagliflozin in Patients With Heart Failure With Preserved Ejection Fraction

Jimmy Zheng, BS<sup>1</sup>; Justin T. Parizo, MD<sup>2</sup>; John A. Spertus, MD, MPH<sup>3</sup>; [et al](#)

[» Author Affiliations](#)

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## Key Points

**Question** Is empagliflozin cost-effective for patients with heart failure with preserved ejection fraction (HFpEF)?

**Findings** In this economic evaluation using a Markov model based on the EMPEROR-Preserved trial population of 5988 patients, empagliflozin had an incremental cost-effectiveness ratio of \$437 442 per quality-adjusted life-year gained. The results were most sensitive to the monthly cost, quality-of-life benefit, and effect on cardiovascular mortality of empagliflozin.

**Meaning** Findings suggest that empagliflozin provides low economic value compared with standard of care for HFpEF, largely due to the lack of benefit on mortality and small benefit on quality of life.

## Abstract

**Importance** In the Empagliflozin Outcome Trial in Patients With Chronic Heart Failure With Preserved Ejection Fraction (EMPEROR-Preserved), empagliflozin significantly reduced hospitalizations for heart failure while improving patient-reported health status compared with placebo. The long-term cost-effectiveness of empagliflozin among patients who have heart failure with preserved ejection fraction (HFpEF) remains unclear.

**Objective** To estimate the cost-effectiveness of empagliflozin in patients with HFpEF.

**Design, Setting, and Participants** This cost-effectiveness analysis performed from October 2021 to April 2022 included a Markov model using estimates of treatment efficacy, event probabilities, and utilities from EMPEROR-Preserved and published literature. Costs were derived from national surveys and pricing data sets. Quality of life was imputed from a heart failure-specific quality-of-life measure. Two analyses were performed, with and without a treatment effect on cardiovascular mortality. Subgroup analyses were based on diabetes status, ejection fraction, and health status impairment due to heart failure. The model reproduced the event rates and risk reduction with empagliflozin observed in EMPEROR-Preserved over 26 months of follow-up; future projections extended across the lifetime of patients.

**Exposures** Empagliflozin or standard of care.

**Main Outcomes and Measures** Hospitalizations for heart failure, life-years, quality-adjusted life-years (QALYs), lifetime costs, and lifetime incremental cost-effectiveness ratio.

**Results** A total of 5988 patients were included in the analysis, with a mean age of 72 years, New York Heart Association class II to IV heart failure, and left ventricular ejection fraction greater than 40%. At the Federal Supply Schedule price of \$327 per month, empagliflozin yielded 0.06 additional QALYs and \$26 257 incremental costs compared with standard of care, producing a cost per QALY gained of \$437 442. Incremental costs consisted of total drug costs of \$29 586 and savings of \$3329 from reduced hospitalizations for heart failure. Cost-effectiveness was similar across subgroups. The results were most sensitive to the monthly cost, quality-of-life benefit, and mortality effect of empagliflozin. A price reduction to \$153 per month, incremental utility of 0.02, or 8% reduction in cardiovascular mortality would bring empagliflozin to \$180 000 per QALY gained, the threshold for intermediate value. Using Medicare Part D monthly pricing of \$375 after rebates and \$511 before rebates, empagliflozin would remain low value at \$509 636 and \$710 825 per QALY gained, respectively. Cost-effectiveness estimates were robust to variation in the frequency and disutility of heart failure hospitalizations.

**Conclusions and Relevance** In this economic evaluation, based on current cost-effectiveness benchmarks, empagliflozin provides low economic value compared with standard of care for HFpEF, largely due to its lack of efficacy on mortality and small benefit on quality of life.

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