



Research article

Cost-effectiveness of dapagliflozin versus sulfonylurea in combination with metformin in patients with type 2 diabetes in Vietnam: Analysis from the Payer's Perspective

Kieu Thi Tuyet Mai^{a*}, Nguyen Le Hiep^a, Pham Hoai Thanh Van^b, Le Hong Minh^c

^a Faculty of Pharmaceutical Management and Economics, Hanoi University of Pharmacy, 13-15 Le Thanh Tong, Cua Nam, Hanoi, Vietnam

^b Healthcare Access, BioPharmaceuticals, AstraZeneca, 76 Le Lai, Ben Thanh, Ho Chi Minh, Vietnam

^c The Health Economics Research and Assessment Center, 209 Ha Ke Tan, Phuong Liet, Hanoi, Vietnam,

* Corresponding author: Kieu Thi Tuyet Mai, email: kieumai210@gmail.com

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ABSTRACT

Type 2 diabetes mellitus (T2DM) poses a substantial economic burden on both patients and healthcare systems. Dapagliflozin, an SGLT2 inhibitor, has shown effective glycemic control and reduced risk of hypoglycemia in T2DM patients; however, its higher treatment cost compared with other antidiabetic agents raises concerns about its economic value. This study assessed the cost-effectiveness of dapagliflozin versus sulfonylurea, both in combination with metformin, in patients with T2DM inadequately controlled on metformin monotherapy, from the Vietnamese healthcare payer's perspective over a lifetime horizon. A model-based cost-utility analysis using the Cardiff Diabetes Model-a patient-level microsimulation-was conducted. Results indicated that dapagliflozin reduced the cumulative incidence of complications, particularly hospitalization for heart failure and chronic kidney disease. The incremental cost and quality-adjusted life-years (QALYs) gained with dapagliflozin were estimated at 15,941,900 VND and 0.52 QALY, respectively, yielding an incremental cost-effectiveness ratio (ICER) of 30,865,504 VND/QALY, well below Vietnam's per capita GDP threshold (~114.2 million VND in 2024). Sensitivity analyses confirmed the robustness of these findings, with dapagliflozin remaining cost-effective across various assumptions. In conclusion, dapagliflozin is a cost-effective and clinically beneficial alternative to sulfonylurea as a first-line therapy in Vietnam, supporting its inclusion in reimbursement schemes and clinical practice guidelines for long-term T2DM management.

* Correspondence: Kieu Thi Tuyet Mai, email: kieumai210@gmail.com;

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INTRODUCTION

Type 2 diabetes mellitus (T2DM) is a serious global health burden, as the number of cases and deaths related to the disease has continuously increased over recent decades. In 2021, an estimated 529 million individuals were living with diabetes globally, of which 96.0% were T2DM cases, accounting for 95.4% of total diabetes-related disability-adjusted life years (DALYs) [1]. From 1990 to 2021, T2DM-related deaths increased by more than 200%, and DALYs rose by nearly 280% [2]. The burden is projected to escalate further, particularly in low- and middle-income countries (LMICs) [2,3].

Alongside the rising prevalence, the economic burden of diabetes is also increasing, impacting both overall healthcare expenditures and individual treatment costs significantly in LMICs [4]. In Vietnam, the annual treatment cost for type 2 diabetes is considerable, representing approximately 7-11% of the national gross domestic product (GDP) per capita [5].

Dapagliflozin was the first SGLT2 inhibitor approved for the treatment of type 2 diabetes mellitus (T2DM), when lifestyle modifications fail to achieve target glycemic control. In clinical trials, dapagliflozin demonstrated non-inferior glycemic control compared to the sulfonylurea, while significantly reducing the risk of hypoglycemia [6]. Additionally, dapagliflozin has shown clinical benefits in patients with heart failure or chronic kidney disease [7,8].

In Vietnam, dapagliflozin is currently reimbursed at 70% under the national health insurance scheme, yet the remaining out-of-pocket costs still pose a substantial financial burden for long-term use. Consequently, sulfonylureas remain the preferred option for patients with limited financial resources.

Despite its clinical benefits, there is limited local evidence on the cost-effectiveness of dapagliflozin compared to other antidiabetic therapies. This study evaluates the cost-effectiveness of dapagliflozin versus sulfonylureas as first-line combination therapy with metformin in patients with T2DM in Vietnam, aiming to provide evidence to support reimbursement and health policy decision-making in the local context.

MATERIALS AND METHODS

Study objective

To evaluate the cost-effectiveness of dapagliflozin in combination with metformin as first-line therapy in patients with type 2 diabetes mellitus who have not achieved target HbA1c control, compared to sulfonylurea combined with metformin.

Cost-utility analysis

A cost-utility analysis was conducted to estimate the incremental cost per quality-adjusted life year (QALY) gained in patients with type 2 diabetes. The model adopted a lifetime time horizon and a cycle length of 6 months, consistent with the structure of the Cardiff T2DM Model and previous economic evaluations in diabetes. The study evaluated direct medical costs from the perspective of the Vietnam National Health Insurance, and effectiveness was measured in terms of utility. A 3% annual discount rate was applied to both costs and health outcomes, in line with WHO recommendations and Vietnamese HTA guidance [9].

Model structure

This study used the previously validated and published Cardiff T2DM Model [10]. The model is designed as a patient-level simulation, consisting of two arms: a control arm (sulfonylurea + metformin) and a

treatment arm (dapagliflozin + metformin). In each arm, a cohort of patients is generated based on user-defined baseline characteristics, with identical profiles for continuous variables (e.g., age, HbA1c) and variation only in binary variables (e.g., sex, event history). Modifiable risk factors (e.g., HbA1c, body weight, blood pressure, cholesterol, eGFR) are adjusted according to the specified treatment effects for each arm. Each patient is simulated in 6-month cycles,

during which risk factors progress based on their natural history and influence the probability of clinical events such as microvascular and macrovascular complications, hypoglycemia, and death. Event probabilities, including microvascular, macrovascular, and mortality, are estimated using DECLARE risk equations [11].

The DECLARE-TIMI 58 risk equations were applied as published without recalibration, given their external validation

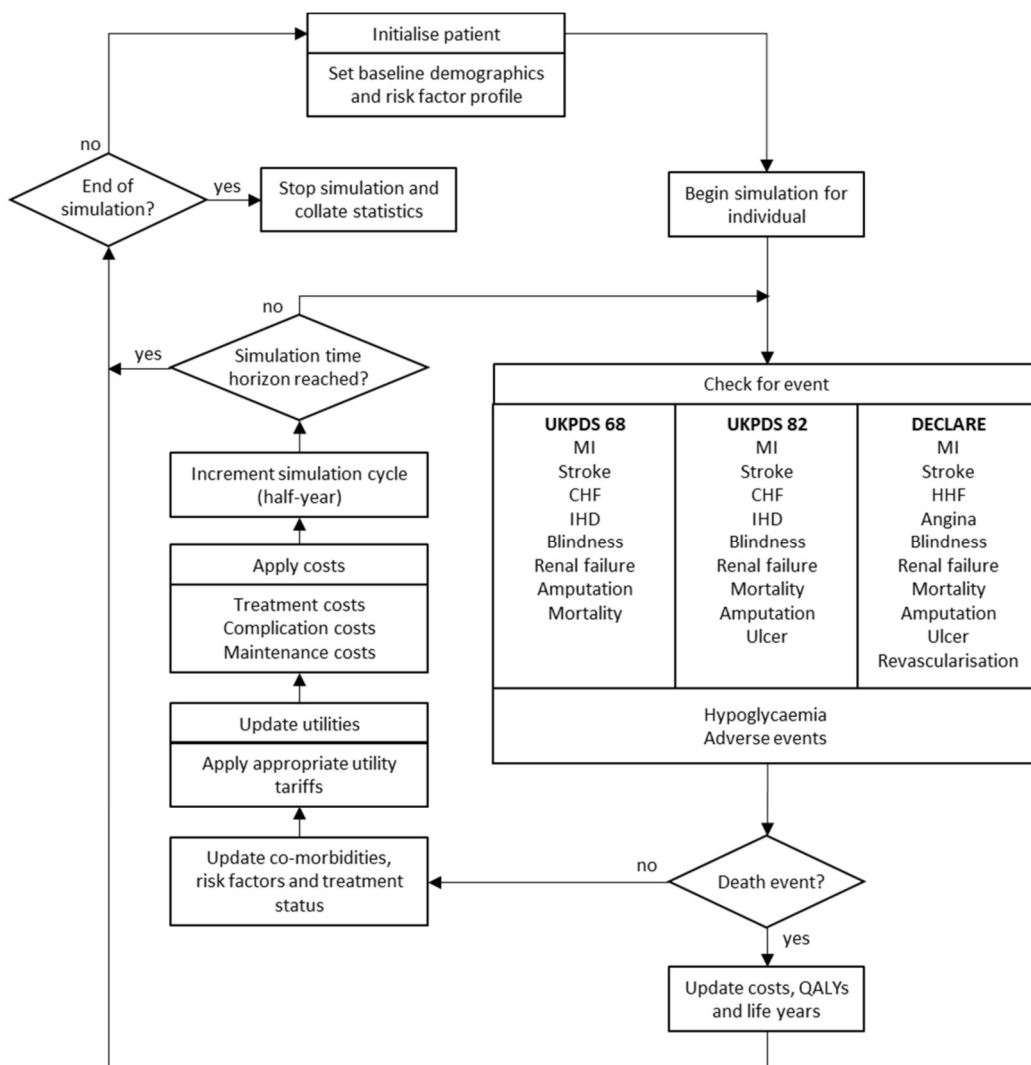


Figure 1. Flow diagram of patient simulation process for one run of one arm in the Cardiff T2DM Model

and use in prior cost-effectiveness analyses of dapagliflozin. DECLARE was selected because it enrolled a broad T2DM population, including both primary and secondary cardiovascular prevention groups, making the risk estimates appropriate for generalizable modeling beyond heart failure-specific cohorts. When a patient experiences a fatal event, the simulation ends for that individual, and all associated costs, life years, and quality-adjusted life years (QALYs) are recorded. If the patient survives, their disease status, treatment costs, complication-related costs, and utility values are updated before moving to the next cycle. After completing the simulation for the control arm, the model is reinitialized to simulate the treatment arm using the same cohort, but with treatment-specific effects applied. Finally, outcomes from both arms are aggregated to calculate average costs, effectiveness, and the incremental cost-effectiveness ratio (ICER). Model performance was validated by comparing key outcomes (QALYs, complication rates, ICERs) with previously published cost-effectiveness analyses of dapagliflozin, ensuring consistency and face validity.

Treatment sequence

The first-line treatment regimen consisted of dapagliflozin + metformin for the treatment arm, and sulfonyleurea + metformin for the control arm. When patients failed to achieve the target HbA1c threshold, subsequent treatment regimens included dapagliflozin + metformin + DPP4i and metformin + insulin, corresponding to HbA1c thresholds of 9.0% and 10.0%, respectively.

Model inputs

Clinical effects: The model estimates clinical effects based on treatment-induced changes in modifiable risk factors, primarily

applied in the first year of therapy, except for eGFR decline, which is updated annually. Treatment profiles and effects are derived from published sources, including Nauck et al., Waugh et al., and the DECLARE-TIMI 58 trial [12-14]. Adverse events and hypoglycaemia are modeled using therapy-specific incidence rates, with the option to simulate three types of hypoglycaemic events (non-severe symptomatic, non-severe nocturnal, and severe). Up to five adverse events can be customized per treatment arm, defined by their annual probabilities, and limited to specific treatment cycles if applicable. Additionally, the model allows adjustments to mortality risk following severe hypoglycaemia or certain adverse events. Annual treatment discontinuation is modeled, with patients transitioning to the next therapy line unless they are already on the final regimen.

Cost: Data on medication costs, including metformin, dapagliflozin, sulfonyleureas (glibenclamide, glimepiride, gliclazide, glipizide), and insulin, were obtained from the 2024 National Drug Bidding Report issued by the Drug Administration of Vietnam [17]. Medication costs were calculated based on the bid price per unit dose, multiplied by the average daily dose to estimate annual treatment costs. For sulfonyleureas, the average cost was further adjusted based on the consumption proportion of each active ingredient, using the Defined Daily Dose (DDD) ratio. For that, the estimated annual medication costs in VND: Metformin (2,892,822), Dapagliflozin (8,381,411), Sulfonyleurea (3,211,806), and Insulin (322 per kg/day).

The costs of managing clinical events were estimated based on published studies conducted in Vietnam and adjusted to 2025

Table 1. Treatment profile: clinical effects

Parameter	Mean	SE	Mean	SE
Profiles derived from Nauck and Waugh				
	Met + SU [12]		Met + Dapa [12]	
HbA1c (%)	-0.520	0.265	-0.520	0.265
Weight (kg)	1.440	0.176	-3.220	0.176
Total cholesterol (mg/dl)	-1.059	0.212	2.796	0.559
HDL cholesterol (mg/dl)	-0.075	0.015	2.660	0.532
SBP (mmHg)	0.800	0.160	-4.300	0.860
DBP (mmHg)	-0.400	0.080	-1.600	0.320
Haematocrit (%)	0.390	0.130	2.860	0.140
Annual eGFR change (ml/min/1.73 ²) [15]	-2.440	0.000	-1.780	0.000
Annual number of hypoglycaemic events:				
Symptomatic	0.408	0.082	0.035	0.007
Nocturnal	0.000	0.000	0.000	0.000
Severe	0.007	0.001	0.000	0.000
Annual probability of adverse events:				
AE1: Diabetic ketoacidosis	0.000	0.000	0.000	0.000
AE2: Urinary tract infection	0.064	0.013	0.108	0.022
AE3: Genital infection	0.027	0.005	0.123	0.025
Probability of discontinuation	0.059	-	0.091	-
Profiles derived from DECLARE				
	Dapagliflozin		Placebo	
HbA1c (%) [16]	-0.679	-0.136	-0.151	-0.030
Weight (kg) [16]	-2.415	-0.483	-0.630	-0.126
Total cholesterol (mg/dl) [14]	2.800	0.417	-1.500	0.411
HDL cholesterol (mg/dl) [14]	1.200	0.090	-0.400	0.096
SBP (mmHg) [16]	-2.810	-0.562	-0.409	-0.082
DBP (mmHg) [16]	-1.546	-0.309	-0.690	-0.138
Haematocrit (%) [14]	2.910	0.035	0.400	0.032
Annual eGFR change (ml/min/1.73) [15]	-1.780	0.000	-2.440	0.000
Symptomatic	0.000	0.000	0.000	0.000
Nocturnal	0.000	0.000	0.000	0.000
Severe [16]	0.0016	0.0003	0.0023	0.0005
AE1: Diabetic ketoacidosis	0.0007	0.0001	0.0003	0.0001
AE2: Genital infection	0.0021	0.0004	0.0003	0.0001
AE3: Urinary tract infection	0.0035	0.0007	0.0037	0.0007
AE4: Acute kidney injury	0.0035	0.0007	0.0049	0.0010
AE5: Fracture	0.0126	0.0025	0.0122	0.0024
Probability of discontinuation [16]	0.049	-	0.058	-

Table 2. Event treatment cost

Event	Year	Cost (VND)	2025 cost (VND) – Mean (SE)		
			Fatal event	Non-fatal event	Maintenance
IHD [19]	2017	7,795,066	9,926,379 (1,985,276)	9,926,379 (1,985,276)	12,504,398 (2,500,880)
MI [20]	2015	69,899,678	94,604,913 (18,920,983)	94,604,913 (18,920,983)	13,290,162 (2,658,032)
2 nd MI [20]	2015	69,899,678	94,604,913 (18,920,983)	94,604,913 (18,920,983)	13,290,162 (2,658,032)
Heart failure [21]	2021	18,178,113	20,688,857 (4,137,771)	20,688,857 (4,137,771)	11,175,822 (2,235,164)
HHF [22]	2021	18,178,113	20,688,857 (4,137,771)	20,688,857 (4,137,771)	11,175,822 (2,235,164)
Stroke [23]	2022	10,519,000	11,606,277 (2,321,255)	11,606,277 (2,321,255)	10,834,534 (2,166,907)
2 nd stroke [23]	2022	10,519,000	11,606,277 (2,321,255)	11,606,277 (2,321,255)	10,834,534 (2,166,907)
Amputation [19]	2017	21,942,067	27,941,427 (5,588,285)	27,941,427 (5,588,285)	27,941,427 (5,588,285)
Blindness [19]	2017	-	0 (0)	0 (0)	14,340,178 (2,868,036)
ESRD [24]	2019	129,626,484	155,097,842 (31,019,568)	155,097,842 (31,019,568)	155,097,842 (31,019,568)
Ulcer [19]	2019	21,942,067	26,253,641 (5,250,728)	26,253,641 (5,250,728)	9,207,815 (1,841,563)
PCI [21]	2024	84,861,931	87,509,623 (17,501,925)	87,509,623 (17,501,925)	10,125,924 (2,025,185)
CABG [21]	2024	84,861,931	87,509,623 (17,501,925)	87,509,623 (17,501,925)	10,125,924 (2,025,185)
CKD – St.1 [25]	2019	532,565	637,213 (127,443)	637,213 (127,443)	
CKD – St.2 [25]	2019	812,741	972,442 (194,488)	972,442 (194,488)	
CKD – St.3 [25]	2019	3,876,147	4,637,803 (927,561)	4,637,803 (927,561)	
CKD – St.4 [25]	2019	7,296,141	8,729,818 (1,745,964)	8,729,818 (1,745,964)	
CKD – St.5 [25]	2019	17,945,125	21,471,308 (4,294,262)	21,471,308 (4,294,262)	
Severe hypoglycemia [19]	2019	2,943,413	3,521,788 (704,358)	3,521,788 (704,358)	
Fracture [26]	2016	33,490,000	44,152,205 (8,830,441)	44,152,205 (8,830,441)	
Ketoacidosis [19]	2019	3,340,695	3,997,135 (799,427)	3,997,135 (799,427)	
2 nd amputation [19]	2017	21,942,067	27,941,427 (5,588,285)	27,941,427 (5,588,285)	

IHD: Ischemic Heart Disease, MI: Myocardial infarction, HHF: Hospitalized Heart Failure, ESRD: End-Stage Renal Disease, PCI: Percutaneous Coronary Intervention, CABG: Coronary Artery Bypass Grafting, CKD: Chronic Kidney Disease, St.: Stage

Table 3. Utility profile: Risk factor effects

Event	Utility decrement	Event	Utility decrement
T2DM-related events			
HAP [27]	0.042 (0.008)	ESRD [28]	0.263 (0.019)
IHD [29]	0.090 (0.009)	CKD stage 2 [30]	0.00 (0.00)
MI [29]	0.055 (0.006)	CKD stage 3a [30]	0.03 (0.006)
2 nd MI [29]	0.055 (0.006)	CKD stage 3b [30]	0.03 (0.006)
Heart failure [29]	0.108 (0.031)	CKD stage 4 [30]	0.05 (0.010)
HHF [29]	0.108 (0.031)	CKD stage 5 [30]	0.05 (0.010)
Stroke [29]	0.164 (0.030)	Ulcer [31]	0.170 (0.019)
2 nd stroke [29]	0.164 (0.030)	PCI [32]	0.038 (0.008) ^{\$} 0.016 (0.003) ^{\$\$}
Amputation [29]	0.280 (0.053)	CABG [32]	
2 nd amputation [29]	0.280 (0.053)	NCR [32]	
Blindness [28]	0.074 (0.007)		
Adverse events and discontinuation		Hypoglycemia-related utility	
Diabetic ketoacidosis	0.000 [#]	Severe event [33]	0.047
Genital infection	0.00283 [#]	Symptomatic event [33]	0.014
Urinary tract infection [34]	0.00283	BMI-related utility	
Acute kidney injury [27]	0.11040	Per 1 unit BMI increase [35]	0.047 (0.005)
Fracture [36]	0.06800	Per 1 unit BMI decrease [35]	-0.017 (0.005)
Discontinuation	0.000 [#]		

*\$*Value for the year of event; *\$\$*Value for subsequent years; *#*Assumption

HAP: Hospitalisation for angina pectoris, IHD: Ischemic Heart Disease, MI: Myocardial infarction, HHF: Hospitalized Heart Failure, ESRD: End-Stage Renal Disease, PCI: Percutaneous Coronary Intervention, CABG: Coronary Artery Bypass Grafting, CKD: Chronic Kidney Disease

prices using the national Consumer Price Index (CPI) [18], as shown in Table 2. Adverse event costs were added separately from event-related treatment costs and applied per occurrence based on annual incidence rates.

Utility: Utility values were derived from previously published studies and cover T2DM-related events, adverse events and discontinuation, hypoglycemia-related utility, and BMI-related utility. These values are presented in Table 3.

Sensitivity analysis

One-way sensitivity analysis and probabilistic sensitivity analysis (PSA) were conducted to assess the impact of parameter uncertainty on the base-case model results. For the PSA, appropriate probability distributions were assigned to all effectiveness, probability, utility, and cost parameters, and second-order Monte Carlo simulations were performed (1,000 iterations for 1,000 patients in the base-case scenario), incorporating standard errors (SEs). In cases

where SEs were unavailable, a $\pm 20\%$ variation from the reported mean value was used for sensitivity analysis. Input values were sampled from probability distributions around the mean of each parameter, using appropriate distributions: costs followed a gamma distribution; patient characteristics followed a normal distribution; and rates and probabilities followed beta distributions.

RESULTS AND DISCUSSIONS

RESULTS

Results from the predictive model indicate that the dapagliflozin treatment arm demonstrates effectiveness comparable to that of the sulfonylurea arm across most macrovascular events, microvascular events, and mortality outcomes. The model predicted fewer cases of hospitalization for heart failure and end-stage renal disease in

the dapagliflozin arm compared to sulfonylurea [6].

Drug treatment costs in the dapagliflozin arm were significantly higher (33,252,350 VND) compared to the sulfonylurea arm, while several event-related costs were reduced, including costs for hospitalization due to heart failure (-1,091,695 VND), treatment of end-stage renal disease (-4,022,242 VND), and costs related to amputation (-12,660,876 VND). Although drug acquisition costs were higher in the dapagliflozin arm, these were partially offset by lower costs associated with heart failure and end-stage renal disease, which were the main drivers of cost-effectiveness. Overall, the total treatment cost for the dapagliflozin arm was 15,941,900 VND higher than that of the sulfonylurea arm.

Model calculations show that for a patient

Table 4. Predicted lifetime cumulative number of events (per 1,000 patients)

	Dapagliflozin Arm	Sulfonylurea Arm	Difference
Macrovascular			
Hospitalisation for Angina	28.9	28.8	0.1
Myocardial infarction	190.7	196.1	-5.4
Hospitalisation for Heart Failure	137.7	153.0	-15.3
Stroke	220.4	222.9	-2.5
PCI	128.3	127.2	1.1
CABG	66.1	66.3	-0.2
Noncoronary Revascularisation	58.2	58.0	0.2
Microvascular			
Blindness	77.9	78.4	-0.5
End-stage renal disease	83.16	127.05	-43.9
Amputation	106.7	105.8	0.9
Ulcer	38.0	39.1	-1.1
Mortality			
Cardiovascular Related	361.1	359.4	1.7
Non-cardiovascular Related	638.9	640.6	-1.7

PCI: Percutaneous Coronary Intervention, CABG: Coronary Artery Bypass Grafting

Table 5. Average total treatment cost per patient estimated by the model (VND)

	Dapagliflozin Arm	Sulfonylurea Arm	Difference
Treatment-related cost			
Drug treatment	200,193,807	166,941,458	33,252,350
Hypoglycaemia	272,484	425,240	-152,757
Other adverse events	565,635	347,530	218,105
Macrovascular event-related cost			
Hospitalisation for Angina	30,888,249	30,704,608	183,641
Myocardial infarction	78,181,007	78,446,136	-265,129
Hospitalisation for Heart Failure	25,434,834	26,526,529	-1,091,695
Stroke	26,547,692	26,571,481	-23,789
PCI	45,598,403	45,286,225	312,178
CABG	22,575,369	22,576,368	-999
Noncoronary Revascularisation	9,470,056	9,423,017	47,039
Microvascular event-related cost			
Blindness	8,226,593	8,215,355	11,238
CKD (stage 2-4)	15,230,339	19,252,581	- 4,022,242
End-stage renal disease	23,286,877	35,947,753	- 12,660,876
Amputation	12,213,526	11,989,919	223,607
Ulcer	3,124,109	3,212,879	- 88,769
Cost-Effectiveness			
Total cost	501,808,979	485,867,079	15,941,900
Life years	14.19	14.11	0.08
QALYs	9.42	8.90	0.52
ICER (VND/QALY)			30,865,504

PCI: Percutaneous Coronary Intervention, CABG: Coronary Artery Bypass Grafting, CKD: Chronic Kidney Disease

receiving first-line treatment with dapagliflozin in combination with metformin, the total cost is 15,941,900 VND higher compared to a patient treated with sulfonylurea. This results in a gain of 0.08 life-years and 0.52 quality-adjusted life-years (QALYs). Accordingly, the incremental cost-effectiveness ratio (ICER) is 30,865,504 VND per QALY gained. This figure is lower than Vietnam's estimated per capita GDP in 2024 (approximately 114 million VND per person). Therefore, dapagliflozin provides an

incremental benefit that is proportionate to the additional cost.

Sensitivity analysis

The probabilistic sensitivity analysis indicated an ICER range of -98 to 117 million VND per QALY, with 99.9% of simulations remaining below the cost-effectiveness threshold.

DISCUSSION

This study, conducted from the perspective of the national health insurance

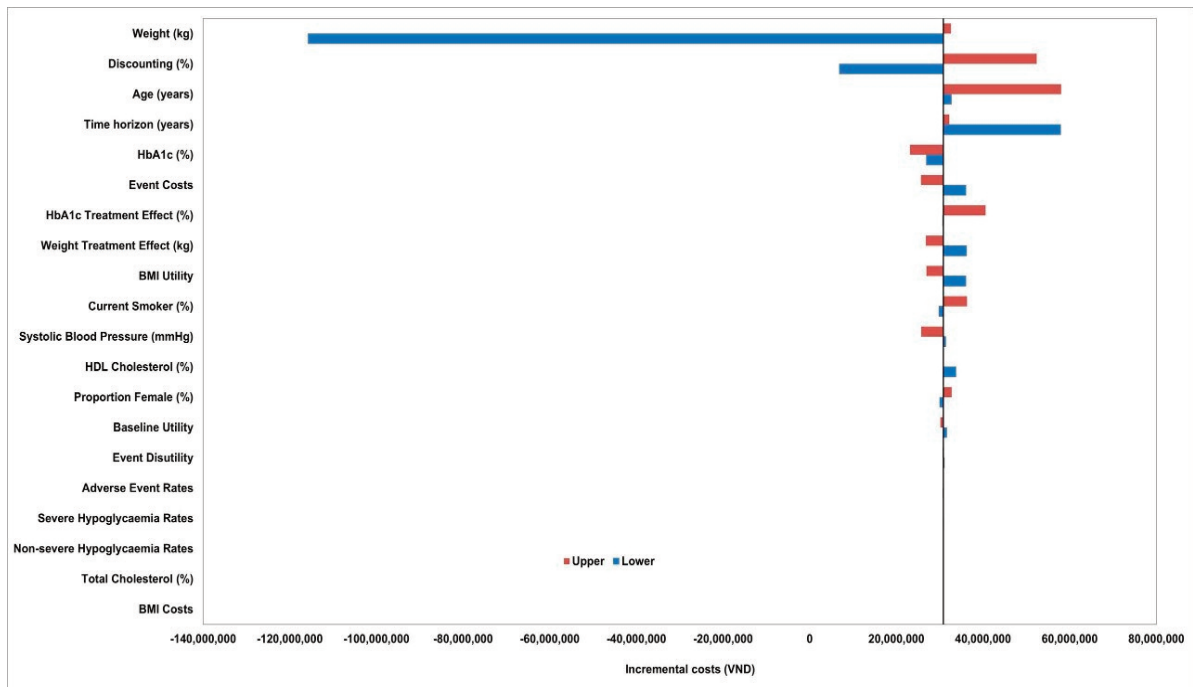


Figure 2. One-way sensitivity analysis

One-way sensitivity analysis showing that variations in key parameters did not raise the ICER above the $1 \times$ GDP per capita threshold, confirming robustness.

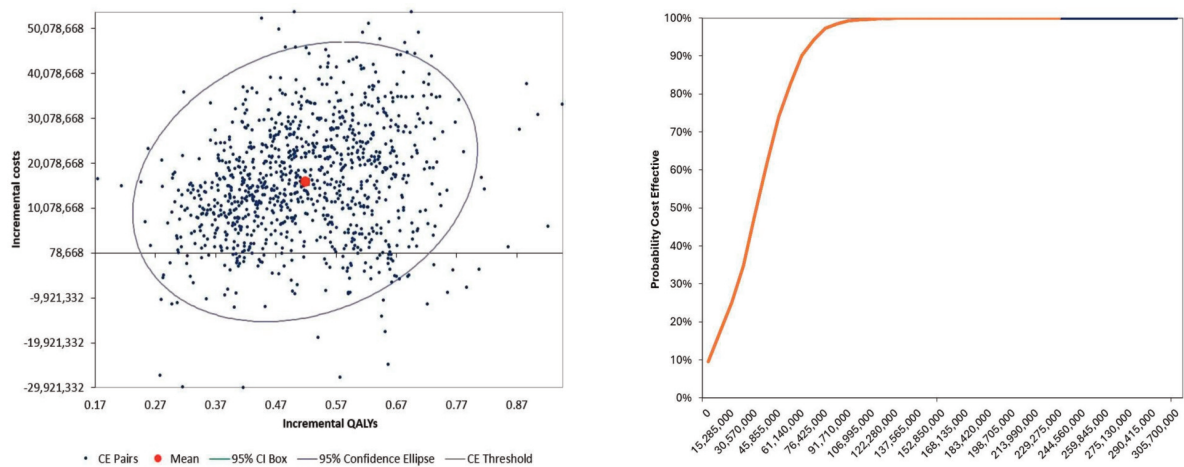


Figure 3. Results of Probabilistic Sensitivity Analysis

system, found that the incremental cost-effectiveness ratio (ICER) of adding dapagliflozin in combination with metformin for the treatment of type 2 diabetes, compared

to sulfonylurea plus metformin, was 30,865,504 VND per QALY (~1,190 USD/QALY). This value is well below the threshold of one time Vietnam’s per capita

GDP in 2024 (~114.2 million VND), indicating that the addition of dapagliflozin in this case is highly cost-effective.

Dapagliflozin has also been shown to be cost-effective compared to sulfonylurea when combined with metformin for patients with type 2 diabetes who fail to achieve glycemic targets, in studies conducted in the UK, Greece, Costa Rica, Ecuador, and India [37-41]. Among these, studies in the UK and India reported highly cost-effective results, with ICERs below one times the per capita GDP - £2,671 (2015) and \$1,421 (2021) per QALY, respectively. Probabilistic sensitivity analysis (PSA) results from both studies also showed that 100% of simulations favored dapagliflozin as cost-effective, consistent with the findings of our study [37,41]. A short-term one-year study conducted in the United States in 2018 also demonstrated the cost-effectiveness of dapagliflozin compared to sulfonylurea when combined with metformin, reporting an ICER of \$19,005 and showing that 96% of simulations indicated cost-effectiveness [42]. Thus, all the studies consistently support the cost-effectiveness of covering dapagliflozin in combination with metformin for the management of type 2 diabetes in patients who do not achieve treatment targets.

The main reasons for these differences likely include the significantly lower healthcare costs in developing countries such as Vietnam and India, covering hospitalization, treatment, dialysis, etc., compared to developed countries like the UK and the US. This leads to a lower incremental cost when using dapagliflozin, resulting in a lower ICER in these settings. Additionally, third-party payer policies also play an important role in influencing outcomes, which may explain the relatively large

variation observed in the study conducted in the US. In addition, differences in model input parameters may also contribute to the variation in results. Model parameters should be calibrated to reflect the specific context of each country. For example, parameters such as average life expectancy, baseline risk factor distributions, BMI trends, or target HbA1c thresholds can be adjusted to align with the population characteristics and disease patterns of each country. This allows for a more accurate simulation of real-world treatment practices in these settings.

Our study has several limitations. In this analysis, the costs associated with diabetes-related complications, such as cardiovascular events, chronic kidney disease, limb amputations, etc., were derived from previous studies conducted in similar contexts. Although these costs were adjusted using a discount rate to reflect their present value, there is still a risk of inaccuracy due to temporal changes in clinical practice, healthcare costs, and service pricing. These figures may not fully capture the most up-to-date costs in the current Vietnamese setting, particularly given the limited availability of real-world cost data. Moreover, the scarcity and lack of diversity in local cost-effectiveness studies for diabetes complications in Vietnam also constrain the ability to incorporate the most recent data into the model. The model parameters were aggregated from various studies conducted on Vietnamese patient populations, and the differences between studies, including methodological approaches (empirical vs. modeling), data sources (real-world vs. assumed), and the range of complications included, can impact the reliability and consistency of the model inputs. However, the proportion of treatment costs, such as

medication and adverse event management, in our study aligns with the cost structure reported in several studies across different scenarios [37, 41], which enhances the credibility of our estimates.

Using the Cardiff patient-level microsimulation model, our study demonstrated the favorable cost-effectiveness of dapagliflozin compared to sulfonylurea when combined with metformin in patients with type 2 diabetes who have not achieved glycemic control. This is accompanied by non-inferior clinical effectiveness, which has been previously validated [6]. In all sensitivity analysis scenarios, dapagliflozin consistently showed appropriate cost-effectiveness.

CONCLUSION

Our findings demonstrate that adding dapagliflozin to metformin for glycemic control in patients with type 2 diabetes who have not achieved treatment goals is highly cost-effective compared with sulfonylurea plus metformin, with an ICER of 30,865,504 VND per QALY—well below Vietnam's 2024 per capita GDP threshold of 114.2

million VND. Currently, dapagliflozin is reimbursed at 70%, meaning patients must still co-pay 30% of the drug cost. This out-of-pocket burden creates a significant barrier to both access and adherence to treatment. Expanding the reimbursement rate for dapagliflozin could substantially reduce financial obstacles for patients, improve long-term adherence, and thereby maximize clinical benefits. Moreover, by lowering the incidence and treatment costs of complications such as heart failure and chronic kidney disease, broader coverage would also help ease pressure on the healthcare system and support more efficient resource allocation.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest related to this study. A co-author is affiliated with AstraZeneca; however, this does not influence the objectivity or integrity of the research.

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