Additional file 3. Transition probabilities between health states in model for SGLT2i and DPP4i users stratified by cardiovascular disease history

Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Transition probabilities among T2D patients with CVD history*										
(a) HF										
Transition probabilities in DPP4i group	0.097	0.037	0.033	0.026	0.021	0.022	0.020	0.018	0.014	0.014†
HR (95% CI) of SGLT2is vs. DPP4is‡					0.66 (0.56-0.77)					
(b) MI										
Transition probabilities in DPP4i group	0.035	0.011	0.011	0.010	0.010	0.010	0.009	0.011	0.008	0.008†
HR (95% CI) of SGLT2is vs. DPP4is‡					0.59 (0.43-0.81)					
(c) Stroke										
Transition probabilities in DPP4i group	0.037	0.024	0.021	0.020	0.019	0.016	0.011	0.012	0.010	0.010†
HR (95% CI) of SGLT2is vs. DPP4is‡					0.59 (0.44-0.79)					
(d) All-cause death*										
Transition probabilities in DPP4i group	-	-	0.008	-	0.009	-	-	-	-	0.010
HR (95% CI) of SGLT2is vs. DPP4is‡					0.57 (0.49-0.67)					
(e) Cardiovascular death*										
Transition probabilities in DPP4i group	-	-	0.003	-	0.004	-	-	-	-	0.005
HR (95% CI) of SGLT2is vs. DPP4is‡					0.61 (0.41-0.91)					
(f) MI followed by HF§	0.087	0.070	0.046	0.021	0.018	0.011	0.011	0.009	0.009†	0.009†
(g) Stroke followed by HF§	0.053	0.054	0.038	0.026	0.016	0.007	0.005	0.005	0.005†	0.005†
(h) HF followed by MI§	0.017	0.022	0.014	0.012	0.009	0.007	0.005	0.002	0.002†	0.002†
(i) HF followed by stroke§	0.026	0.028	0.023	0.016	0.013	0.007	0.003	0.003	0.003†	0.003†
Transition probabilities among T2D patients without CVD history*										

(a) Heart failure (HF)										
Transition probabilities in DPP4i group	0.004	0.010	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010†
HR (95% CI) of SGLT2is vs. DPP4is‡					0.36 (0.28-0.46)					
(b) Myocardial infarction (MI)										
Transition probabilities in DPP4i group	0.002	0.004	0.004	0.005	0.004	0.005	0.005	0.005	0.005	0.005†
HR (95% CI) of SGLT2is vs. DPP4is‡					0.65 (0.48-0.90)					
(c) Stroke										
Transition probabilities in DPP4i group	0.024	0.013	0.013	0.012	0.011	0.011	0.010	0.009	0.008	0.008†
HR (95% CI) of SGLT2is vs. DPP4is‡					0.62 (0.51-0.74)					
(d) All-cause death*										
Transition probabilities in DPP4i group	-	-	0.008	-	0.009	-	-	-	-	0.010
HR (95% CI) of SGLT2is vs. DPP4is‡					0.57 (0.49-0.67)					
(e) Cardiovascular death*										
Transition probabilities in DPP4i group	-	-	0.003	-	0.004	-	-	-	-	0.005
HR (95% CI) of SGLT2is vs. DPP4is‡					0.61 (0.41-0.91)					
(f) MI followed by HF§	0.047	0.054	0.026	0.015	0.012	0.003	0.003	0.003	0.003†	0.003†
(g) Stroke followed by HF§	0.020	0.027	0.017	0.013	0.010	0.009	0.006	0.003	0.003†	0.003†
(h) HF followed by MI§	0.016	0.016	0.012	0.005	0.003	0.002	0.002	0.002	0.002†	0.002†
(i) HF followed by stroke§	0.016	0.023	0.011	0.007	0.009	0.002	0.003	0.003	0.003†	0.003†

Abbreviations: CVD, cardiovascular disease; T2D, type 2 diabetes, HF, heart failure, MI, myocardial infarction; HR, hazard ratio; CI, confidence interval; SGLT2is, sodium-glucose cotransporter-2 inhibitors; DPP4is, dipeptidyl peptidase 4 inhibitors.

Note: Symbols (a) - (i) refer to the transition pathways between health states shown in Supplementary Figure 1: Model structure.

*Detailed estimations for transition probabilities between health states are available in Supplementary Table 1.

[†]The transition probabilities were not available due to limited follow-up period for SGLT2i use in the study database, and thus the transition probabilities remained constant with the last estimates available in the database.

[‡]The transition probabilities of SGLT2i group were transformed using the ProbToProb function in TreeAge software with the following steps: 1) $Rate_{DPP4is} = -\ln(1-probability_{DPP4is})/time$, 2) $Rate_{SGLT2is}=Rate_{DPP4is}\times HR$, 3) $Probability_{SGLT2is} = 1 - e^{(-Rate_{SGLT2is}\times time)}$. "Rate" refers to the rates of clinical events, "probability" is the probability of event occurrence in a given time, and "HR" is the hazard ratio of clinical events associated with the use of SGLT2is versus DPP4is. The normal distribution was assumed for the hazard ratios of SGLT2is versus DPP4is in the probabilistic sensitivity analysis.

[§]The transition probabilities were assumed to be the same in the DPP4i and SGLT2i groups because no available evidence supports different treatment effects on subsequent cardiovascular events between the two treatments.