Supplementary Material

This appendix has been provided by the authors to give readers additional information about their work.

Dapagliflozin Utilization in Chronic Kidney Disease and its Real-World Effectiveness Among Patients with Lower Levels of Albuminuria in the US and Japan

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Supplementary statistics: Bayesian dynamic borrowing

Bayesian dynamic borrowing was used to investigate how results from the total cohort of patients with UACR < 200 mg/g could be used as an informative prior distribution for the results in the subgroup of patients without type 2 diabetes. This analysis used a mixture prior, where the informative prior from the total cohort was mixed with a weak prior representing minimal knowledge of what the true effect in patients without type 2 diabetes might be. The informative prior was a normal distribution with mean and standard deviation corresponding to the point estimate and confidence interval for the total cohort ($\mu = 1.07$ and $\sigma = 0.32$). The weak prior was set as normal with $\mu = 0$ and $\sigma = 24$ where the expected value reflects no effect of dapagliflozin and the standard deviation is set to reflect the standard error in the informative prior, but with one observation.

A tipping point analysis was performed, revealing that a weight of 0.3 on the informative prior was enough to result in a treatment effect with dapagliflozin initiation that had a 95% credibility interval not including 0.
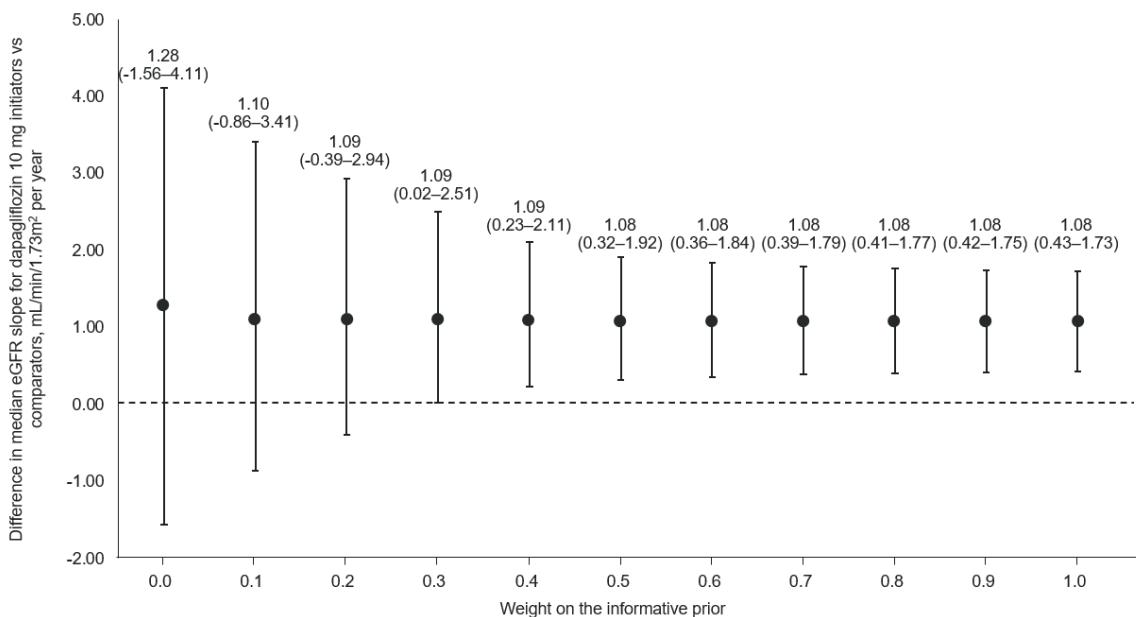
Figure. Bayesian dynamic borrowing tipping point analysis with weights on the informative prior from 0 to 1.

Fig. S1 *Patient flow diagram: dapagliflozin 10 mg prescription patterns since the CKD indication was approved in the US and Japan.*
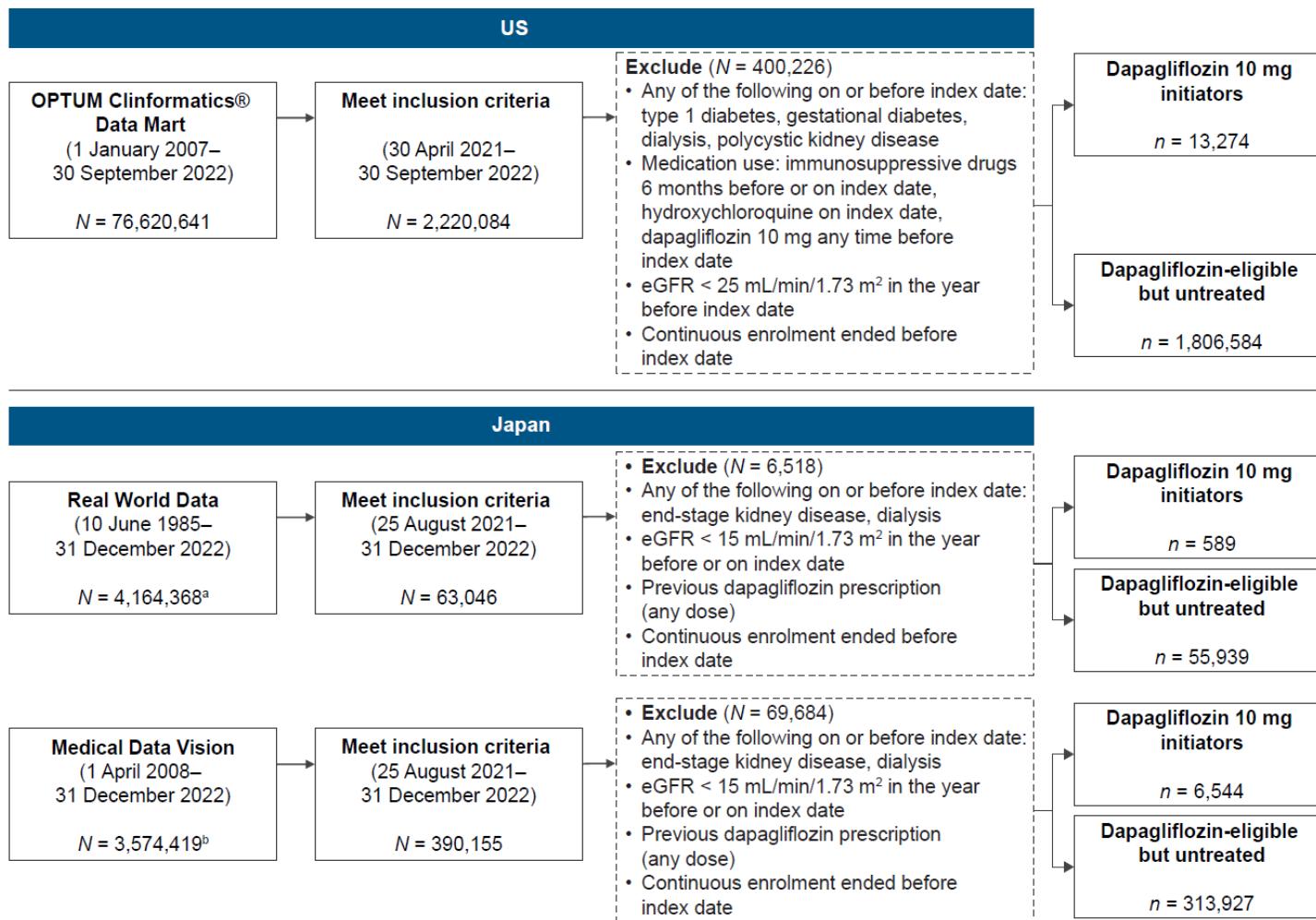
[a]Included only patients with at least one eGFR of < 90 mL/min/1.73m^2 ever

[b]Included only patients with at least one eGFR of < 90 mL/min/1.73m^2 or a CKD diagnosis code ever

CKD chronic kidney disease, *eGFR* estimated glomerular filtration rate

Fig. S2 *Effectiveness analysis: quantile regression per decile among patient with UACR < 200 mg/g*
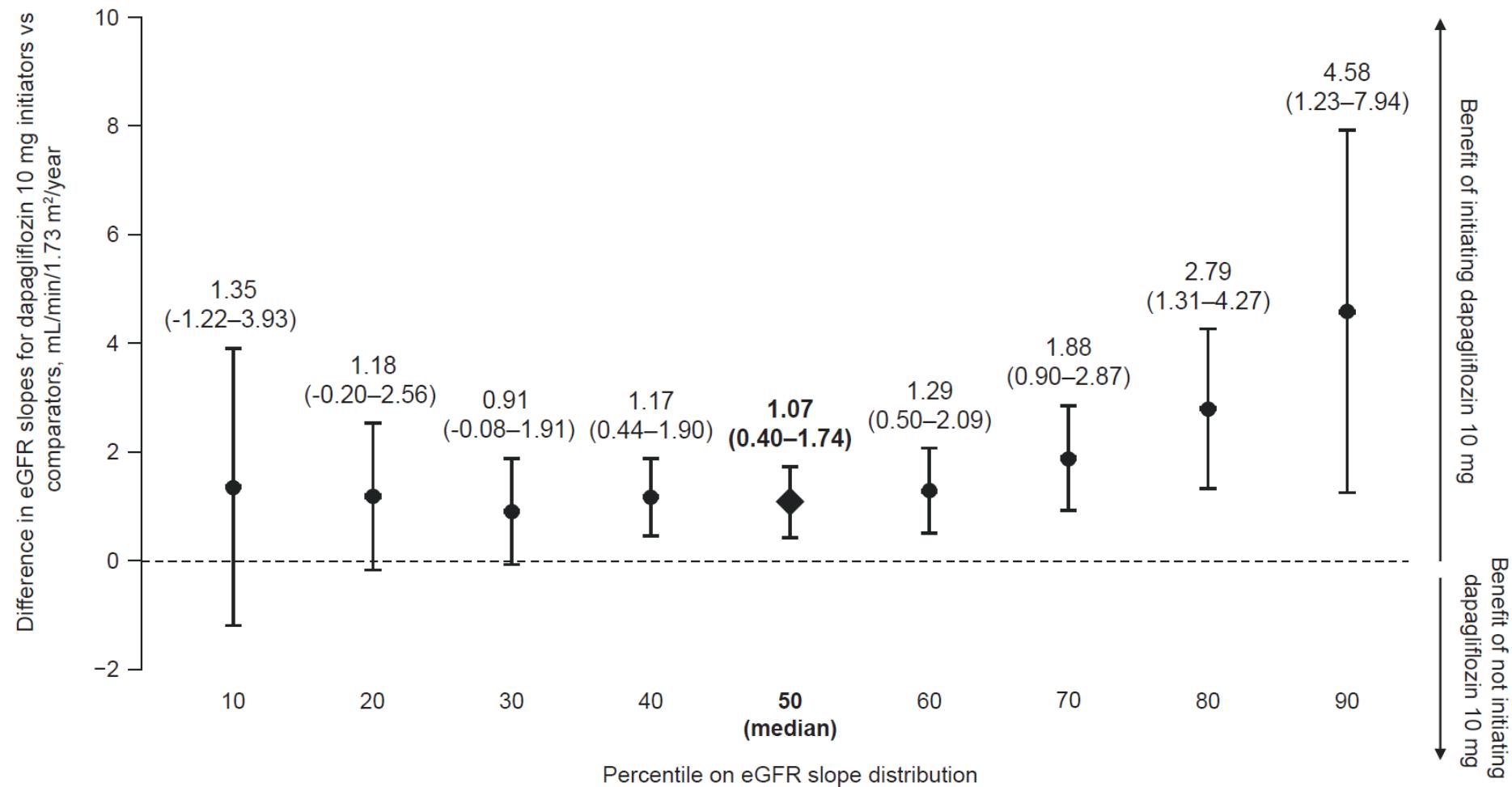
eGFR estimated glomerular filtration rate, *UACR* urinary albumin-to-creatinine ratio

Table S1 *Descriptive analysis: eligibility criteria for dapagliflozin 10 mg utilization.*

	US (Optum Clinformatics® Data Mart)	Japan (Real World Data Co. Ltd)	Japan (Medical Data Vision Co. Ltd)
Inclusion criteria			
Age ≥ 18 years	X	X	X
CKD definition (any of the criteria)	•UACR ≥ 30 mg/g •CKD diagnosis code[a] •Two eGFR measurements at least 90 days apart, both < 60 mL/min/1.73 m^2	•UACR ≥ 30 mg/g •CKD diagnosis code[a] •Two eGFR measurements at least 90 days apart, both < 60 mL/min/1.73 m^2	•CKD diagnosis code[a] •Two eGFR measurements at least 90 days apart, both < 60 mL/min/1.73 m^2
≥ 365 days of continuous enrolment before index date	X	X	X
Exclusion criteria			
Diagnosed with type 1 diabetes on or before index date	X		
Diagnosis of gestational diabetes mellitus on or before index date	X		
Dialysis on or before index date	X	X	X
Dapagliflozin 10 mg any time before index date	X	X	X
Diagnosis or procedure indicative of end-stage kidney disease		X	X
Polycystic kidney disease on or before index date	X		
Use of immunosuppressive drugs 6 months before or on index date	X		
Use of hydroxychloroquine on index date	X		
Not within eGFR range on or in year before index date	< 25 mL/min/1.73 m^2	< 15 mL/min/1.73 m^2	< 15 mL/min/1.73 m^2

An X indicates that the criterion was applied in the database of interest

[a]Full code list is available in Table S5

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CKD chronic kidney disease, *eGFR* estimated glomerular filtration rate, *SGLT-2i* sodium-glucose cotransporter-2 inhibitor, *UACR* urinary albumin-to-creatinine ratio, *UPCR* urinary protein-to-creatinine ratio

Table S2 *Descriptive analysis: baseline characteristics of dapagliflozin 10 mg initiators and dapagliflozin eligible but untreated patients.*

	Dapagliflozin 10 mg initiators			Dapagliflozin eligible but untreated patients		
	US	Japan (RWD)	Japan (MDV)	US	Japan (RWD)	Japan (MDV)
Number of patients	13,274	589	6,544	1,806,584	55,939	313,927
Female, n (%)	5,810 (44)	192 (33)	2,114 (32)	952,895 (53)	25,926 (46)	130,182 (42)
Age, median, years (IQR)	73 (69-79)	77 (68-83)	71 (58-79)	75 (68-82)	80 (72-86)	78 (70-85)
Race, n (%)		n/a	n/a		n/a	n/a
Asian	602 (4)			58,159 (3)		
Black	2,384 (18)			218,957 (12)		
Hispanic	2,032 (15)			205,725 (11)		
White	7,282 (55)			1,205,184 (67)		
Other/unknown	974 (7)			118,559 (7)		
Insurance type, n (%)		n/a	n/a		n/a	n/a
Commercial	349 (3)			252,635 (14)		
Medicare	12,925 (97)			1,553,949 (86)		
BMI available, n (%)	4,505 (34)	211 (36)	2,403 (37)	350,647 (19)	21,397 (38)	173,215 (55)
BMI, kg/m^2, mean (SD)	31.8 (7.0)	23.4 (3.6)	24.5 (4.8)	29.7 (6.7)	23.0 (4.3)	22.8 (4.3)
BMI category, kg/m^2, n (%)						
0–18.4	27 (1)	15 (7)	154 (6)	5,793 (2)	2,846 (13)	25,969 (15)
18.5–24.9	648 (14)	130 (62)	1,318 (55)	77,938 (22)	12,592 (59)	102,046 (59)
25.0–29.9	1,310 (29)	57 (27)	660 (28)	119,239 (34)	4,787 (22)	35,664 (21)
≥30	2,520 (56)	9 (4)	271 (11)	147,677 (42)	1,172 (6)	9,536 (5)
Comorbidities, n (%)						
Atrial fibrillation	3,895 (30)	252 (43)	1,359 (21)	367,032 (20)	11,376 (20)	53,021 (17)
Hypertension	12,950 (98)	540 (92)	5,657 (86)	1,582,315 (88)	40,698 (73)	205,156 (65)
Heart failure	6,258 (47)	417 (71)	2,944 (45)	427,195 (24)	23,613 (42)	119,123 (38)
Myocardial infarction	2,021 (15)	85 (14)	278 (4)	137,057 (8)	3,988 (7)	12,045 (4)
Stroke	3,954 (30)	179 (30)	897 (14)	443,701 (25)	17,960 (32)	49,943 (16)
Other cardiovascular disease	9,897 (75)	356 (60)	2,127 (33)	1,096,498 (61)	22,764 (41)	91,828 (29)

Type 2 diabetes	11,290 (85)	232 (39)	2,384 (36)	887,419 (49)	17,706 (32)	104,275 (33)
Medications, n (%)						
SGLT2-is (excl. dapagliflozin 10 mg)	884 (7)	17 (3)	198 (3)	57,053 (3)	1,404 (3)	7,789 (2)
RASis	10,709 (81)	373 (63)	3,487 (53)	940,504 (52)	14,838 (27)	60,147 (19)
ACEis	4,883 (37)	85 (14)	555 (8)	496,067 (27)	2,436 (4)	9,350 (3)
ARBs	5,298 (40)	306 (52)	2,950 (45)	453,052 (25)	12,811 (23)	51,389 (16)
Cardiovascular medications (any)	12,786 (96)	485 (82)	4,132 (63)	1,314,304 (73)	25,245 (45)	101,524 (32)
Statins	11,006 (83)	259 (44)	2,145 (33)	985,372 (55)	11,628 (21)	42,969 (14)
β-blockers	8,386 (63)	300 (51)	1,614 (25)	657,822 (36)	8,788 (16)	35,004 (11)
Loop diuretics	5,304 (40)	264 (45)	1,531 (23)	284,392 (16)	8,327 (15)	39,704 (13)
Calcium channel blockers	5,658 (43)	204 (35)	2,209 (34)	544,284 (30)	13,711 (25)	56,750 (18)
Antiplatelets/anticoagulants	2,710 (20)	183 (31)	1,216 (19)	187,689 (10)	8,551 (15)	33,374 (11)
Glucose-lowering medications (any)	9,313 (70)	104 (18)	876 (14)	501,277 (28)	8,572 (15)	35,464 (11)
Metformin	5,967 (45)	29 (5)	268 (4)	364,262 (20)	3,429 (6)	11,458 (4)
Insulin	3,296 (25)	30 (5)	222 (3)	134,375 (7)	2,239 (4)	11,156 (4)
Sulfonylureas	3,597 (27)	10 (2)	107 (2)	164,224 (9)	1,653 (3)	5,491 (2)
GLP-1RAs	1,767 (13)	10 (2)	104 (2)	69,366 (4)	728 (1)	4,098 (1)
DPP-4 inhibitors	1,845 (14)	77 (13)	604 (9)	69,729 (4)	5,628 (10)	23,992 (8)
Glitazones	1,033 (8)	4 (1)	29 (< 1)	41,225 (2)	427 (1)	1,460 (< 1)
eGFR available, n (%)	9,528 (72)	588 (100)	1,585 (24)	1,111,605 (62)	55,325 (99)	101,287 (32)
eGFR, mean, mL/min/1.73 m^2 (SD)	54.6 (18.6)	48.9 (18.9)	48.4 (19.4)	62.7 (19.7)	56.0 (21.5)	53.6 (21.3)
eGFR category, mL/min/1.73 m^2, n (%)						
≥ 60	2,984 (31)	110 (19)	342 (22)	498,823 (45)	12,104 (22)	20,397 (20)
45–59	3,205 (34)	222 (38)	495 (31)	420,008 (38)	27,559 (50)	47,661 (47)
30–44	2,891 (30)	177 (30)	480 (30)	168,369 (15)	11,063 (20)	21,506 (21)
15–29[a]	448 (5)	79 (13)	268 (17)	24,227 (2)	4,592 (8)	11,695 (12)
UACR available, n (%)	6,079 (46)	245 (42)	n/a	476,118 (26)	14,007 (25)	n/a
UACR, mg/g, median (IQR)	45.0 (11.8-202.9)	2.3 (1.5-20.2)		25.9 (7.9-72.0)	32.8 (2.8-81.8)	
UACR category, mg/g, n (%)						

0–29	2,512 (41)	194 (79)	250,221 (53)	6,202 (44)
30–299	2,341 (39)	28 (11)	184,742 (39)	6,167 (44)
≥ 300	1,226 (20)	23 (9)	41,148 (9)	1,638 (12)
< 200	4,542 (75)	219 (89)	419,370 (88)	12,031 (86)

[a]US lower eGFR threshold was 25 mL/min/1.73m^2

ACEi angiotensin-converting enzyme inhibitor, *ARB* angiotensin-receptor blocker, *BMI* body mass index, *eGFR* estimated glomerular filtration rate, *DPP-4* dipeptidyl peptidase-4, *GLP-1 RA* glucagon-like peptide-receptor 1 agonist, *IQR,* interquartile range, *MDV* Medical Data Vision, *n/a* not applicable, *RASi* renin-angiotensin system inhibitor, *RWD* Real World Data, *SD* standard deviation, *SGLT-2i* sodium-glucose cotransporter-2 inhibitor, *UACR* urinary albumin-to-creatinine ratio

Table S3a *Effectiveness analysis: baseline characteristics of the unmatched cohort in the US.*

	UACR < 200 mg/g		UACR < 200 mg/g AND no type 2 diabetes	
	Initiated dapagliflozin 10 mg	**Did not initiate dapagliflozin 10 mg**	**Initiated dapagliflozin 10 mg**	**Did not initiate dapagliflozin 10 mg**
Number of patients	2,776	12,967	190	919
Female, n (%)	1,234 (44)	5,795 (45)	81 (43)	395 (43)
Age, years, median (IQR)	74 (70-79)	74 (70-79)	77 (72-82)	77 (72-82)
Race, n (%)				
Asian	152 (5)	687 (5)	5 (3)	20 (2)
Black	410 (15)	1,631 (13)	30 (16)	107 (12)
Hispanic	640 (23)	3,093 (24)	34 (18)	198 (22)
White	1,426 (51)	6,897 (53)	112 (59)	549 (60)
Other/unknown	148 (5)	659 (5)	9 (5)	45 (5)
Insurance type, n (%)				
Commercial	103 (4)	978 (8)	6 (3)	62 (7)
Medicare	2,673 (96)	11,989 (92)	184 (97)	857 (93)
BMI available, n (%)	1,014 (37)	3,773 (29)	70 (37)	315 (34)
BMI, kg/m^2, mean (SD)	32.0 (6.9)	31.3 (6.8)	28.7 (5.6)	28.2 (6.0)
BMI category, kg/m^2, n (%)				
0–18.4	< 5[a]	33 (1)	< 5[a]	7 (2)
18.5–24.9	143 (14)	562 (15)	13 (19)	79 (25)
25.0–29.9	298 (30)	1,182 (31)	35 (50)	136 (43)
≥ 30	572 (56)	1,996 (53)	21 (30)	93 (30)
CKD aetiology, n (%)				
Diabetic	1,805 (65)	8,340 (64)	n/a	n/a
Hypertensive	1,559 (56)	6,704 (52)	139 (73)	533 (60)
Glomerular disease	744 (27)	3,121 (24)	37 (19)	200 (22)
Renal tubulo-interstitial disease	436 (16)	2,176 (17)	42 (22)	162 (18)
Comorbidities, n (%)				

Angina pectoris	544 (20)	2,216 (17)	40 (21)	165 (18)
Atrial fibrillation	734 (26)	2,914 (22)	81 (43)	257 (28)
Bradycardia	437 (16)	2,063 (16)	48 (25)	198 (22)
Heart failure	1,167 (42)	5,281 (41)	112 (59)	530 (58)
Hypertension	2,715 (98)	12,654 (98)	186 (98)	882 (96)
Myocardial infarction	369 (13)	1,209 (9)	23 (12)	91 (10)
Stroke	877 (32)	3,923 (30)	56 (29)	298 (32)
Other cardiovascular disease	2,030 (73)	9,101 (70)	157 (83)	722 (79)
Anaemia	1,531 (55)	6,675 (51)	106 (56)	506 (55)
Hyperkalaemia	533 (19)	1,978 (15)	41 (22)	137 (15)
Type 2 diabetes	2,572 (93)	12,004 (93)	n/a	n/a
Medications, n (%)				
RASis	2,391 (86)	11,176 (86)	160 (84)	790 (86)
ARNIs	305 (11)	307 (2)	41 (22)	28 (3)
β-blockers	1,685 (61)	6,823 (53)	145 (76)	506 (55)
Calcium channel blockers	1,190 (43)	5,604 (43)	94 (49)	396 (43)
Diuretics	1,431 (52)	5,355 (41)	131 (69)	415 (45)
Antithrombotic agents	561 (20)	2,194 (17)	38 (20)	153 (17)
Statins	2,447 (88)	11,010 (85)	140 (74)	630 (69)
Antihyperkalaemic treatments	42 (2)	89 (< 1)	< 5[a]	5 (< 1)
Antidiabetic treatments	2,286 (82)	10,078 (78)	n/a	n/a
Other medications[b]	1,441 (52)	6,538 (50)	103 (54)	482 (52)
eGFR available, n (%)	2,756 (99)	12,793 (99)	190 (100)	910 (99)
eGFR, mL/min/1.73 m^2, mean (SD)	57.7 (19.3)	64.0 (19.3)	50.3 (14.7)	60.4 (18.5)
eGFR, mL/min/1.73 m^2, median (IQR)	53.5 (42.8-70.7)	61.8 (49.3-78.7)	48.0 (40.4-57.6)	58.4 (47.0-72.4)
eGFR category, mL/min/1.73 m^2, n (%)				
≥ 60	1,060 (38)	6,815 (53)	37 (19)	421 (46)
45–59	874 (32)	3,702 (29)	77 (41)	292 (32)

30–44	747 (27)	2,055 (16)	70 (37)	170 (19)
15–29	75 (3)	221 (2)	6 (3)	27 (3)
UACR available, n (%)	2,774 (100)	12,952 (100)	190 (100)	919 (100)
UACR, mg/g, mean (SD)	40.0 (45.3)	34.8 (53.7)	30.4 (40.7)	29.9 (42.2)
UACR, mg/g, median (IQR)	21.3 (7.0-56.2)	18.0 (6.9-46.0)	14.0 (5.0-37.9)	15.0 (5.0-37.6)
UACR category, mg/g, n (%)				
0–29	1,598 (58)	8,155 (63)	131 (69)	624 (68)
30–200	1,178 (42)	4,812 (37)	59 (31)	295 (32)
With UACR/UPCR measure and no type 2 diabetes, n (%)				
UACR	190 (7)	919 (7)	190 (100)	919 (100)
UPCR	93 (12)	333 (13)	93 (48)	313 (34)
Healthcare provider, n (%)				
Primary care	1,693 (61)	8,809 (68)	94 (49)	551 (60)
Other	1,083 (39)	4,158 (32)	96 (51)	368 (40)

[a]Exact n numbers for US cohorts with n < 5 not shown in accordance with Clinformatics Data Mart patient privacy guidelines.

[b]Calcium, magnesium, nonsteroidal anti-inflammatory drugs, systemic corticosteroids or vitamin D

ARNI angiotensin-receptor neprilysin inhibitor, *BMI* body mass index, *CKD* chronic kidney disease, *eGFR* estimated glomerular filtration rate, *IQR* interquartile range, *n/*a not applicable, *RASi* renin-angiotensin system inhibitor, *SD* standard deviation, *UACR* urinary albumin-creatinine ratio, *UPCR* urinary protein-creatinine ratio

Table S3b *Effectiveness analysis: baseline characteristics of the unmatched cohort in Japan.*

	UACR < 200 mg/g		UACR < 200 mg/g AND no type 2 diabetes	
	Initiated dapagliflozin 10 mg	**Did not initiate dapagliflozin 10 mg**	**Initiated dapagliflozin 10 mg**	**Did not initiate dapagliflozin 10 mg**
Number of patients	253	846	110	365
Female, n (%)	83 (33)	279 (33)	35 (32)	125 (34)
Age, years, median (IQR)	72 (60-79)	74 (65-80)	70 (55-78)	71 (63-80)
BMI available, n (%)	80 (32)	280 (33)	23 (21)	113 (31)
BMI, kg/m^2, mean (SD)	25.2 (5.1)	23.8 (4.1)	22.6 (3.3)	23.1 (3.8)
BMI category, kg/m^2, n (%)				
0–18.4	3 (4)	23 (8)	2 (9)	9 (8)
18.5–24.9	42 (53)	154 (55)	17 (74)	72 (64)
25.0–29.9	24 (30)	86 (31)	3 (13)	29 (26)
≥ 30	11 (14)	17 (6)	1 (4)	3 (2)
CKD aetiology, n (%)				
Diabetic	13 (5)	35 (4)	n/a	n/a
Hypertensive	0	7 (< 1)	0	5 (1)
Glomerular disease	90 (36)	204 (24)	52 (47)	131 (36)
Renal tubulo-interstitial disease	21 (8)	119 (14)	8 (7)	74 (20)
Comorbidities, n (%)				
Angina pectoris	109 (43)	340 (40)	37 (34)	115 (32)
Atrial fibrillation	89 (35)	183 (22)	33 (30)	66 (18)
Bradycardia	5 (2)	14 (2)	2 (2)	3 (< 1)
Heart failure	151 (60)	507 (60)	55 (50)	181 (50)
Hypertension	225 (89)	749 (89)	95 (86)	331 (91)
Myocardial infarction	39 (15)	77 (9)	13 (12)	24 (7)
Stroke	82 (32)	279 (33)	26 (24)	101 (28)
Other cardiovascular disease	132 (52)	428 (51)	46 (42)	140 (38)
Anaemia	97 (38)	287 (34)	40 (36)	117 (32)

Hyperkalaemia	29 (11)	69 (8)	12 (11)	29 (8)
Type 2 diabetes	125 (49)	414 (49)	n/a	n/a
Medications, n (%)				
RASis	174 (69)	586 (69)	80 (73)	258 (71)
ARNIs	12 (5)	13 (2)	1 (<1)	3 (<1)
β-blockers	110 (43)	256 (30)	46 (42)	98 (27)
Calcium channel blockers	99 (39)	390 (46)	39 (35)	167 (46)
Diuretics	112 (44)	259 (31)	46 (42)	99 (27)
Antithrombotic agents	77 (30)	235 (28)	23 (21)	78 (21)
Statins	127 (50)	389 (46)	46 (42)	138 (38)
Antihyperkalaemic treatments	16 (6)	43 (5)	7 (6)	17 (5)
Antidiabetic treatments	79 (31)	338 (40)	n/a	n/a
Other medications[a]	87 (34)	412 (49)	37 (34)	172 (47)
eGFR available, n (%)	253 (100)	843 (100)	110 (100)	365 (100)
eGFR, mL/min/1.73 m^2, mean (SD)	59.9 (23.4)	70.2 (22.9)	56.6 (22.4)	67.7 (23.2)
eGFR, mL/min/1.73 m^2, median (IQR)	55.6 (41.1-72.7)	68.1 (51.5-90.1)	52.5 (39.1-66.1)	63.4 (48.4-88.0)
eGFR category, mL/min/1.73 m^2, n (%)				
≥60	102 (40)	511 (61)	39 (35)	197 (54)
45-59	79 (31)	190 (23)	36 (33)	101 (28)
30-44	61 (24)	131 (16)	30 (27)	63 (17)
15-29	11 (4)	11 (1)	5 (5)	4 (1)
UACR available, n (%)	253 (100)	846 (100)	110 (100)	365 (100)
UACR, mg/g, mean (SD)	32.9 (55.3)	47.0 (54.8)	18.8 (38.7)	37.4 (47.2)
UACR, mg/g, median (IQR)	5.6 (1.5-47.8)	29.4 (5.8-69.4)	1.8 (1.3-5.8)	17.3 (1.7-51.7)
UACR category, mg/g, n (%)				
0-29	173 (68)	449 (53)	89 (81)	226 (62)
30-200	80 (32)	397 (47)	21 (19)	139 (38)

With UACR/UPCR measure and no type 2 diabetes, n (%)				
UACR	110 (43)	385 (46)	110 (100)	365 (100)
UPCR	96 (52)	319 (59)	96 (87)	302 (83)
Healthcare provider, n (%)	246 (97)	793 (94)	109 (99)	322 (91)
Primary care	51 (21)	245 (31)	16 (15)	102 (31)
Other	195 (79)	548 (69)	93 (85)	230 (69)

[a]Calcium, magnesium, nonsteroidal anti-inflammatory drugs, systemic corticosteroids, or vitamin D

ARNI angiotensin-receptor neprilysin inhibitor, *BMI* body mass index, *CKD* chronic kidney disease, *eGFR* estimated glomerular filtration rate, *IQR* interquartile range, *n/*a not applicable, *RASi* renin-angiotensin system inhibitor, *SD* standard deviation, *UACR* urinary albumin-creatinine ratio, *UPCR* urinary protein-creatinine ratio

Table S4 *Effectiveness analysis: complete baseline characteristics of the propensity score matched cohort (US and Japan combined)*

	UACR < 200 mg/g			UACR < 200 mg/g AND no type 2 diabetes		
	Initiated dapagliflozin 10 mg	Did not initiate dapagliflozin 10 mg	SMD[a]	Initiated dapagliflozin 10 mg	Did not initiate dapagliflozin 10 mg	SMD[a]
Number of patients	2,972	2,972		275	275	
Female, n (%)	1,296 (44)	1,305 (44)	0.0061	107 (39)	107 (39)	<0.0001
Age, years, median (IQR)	74 (69-79)	73 (69-78)	0.0222	75 (68-81)	76 (69-81)	0.0479
Race, n (%)			0.0319			0.08
Asian	379 (13)	387 (13)		100 (36)	99 (36)	
Black	404 (14)	424 (14)		29 (11)	33 (12)	
Hispanic	639 (22)	605 (20)		33 (12)	30 (11)	
White	1,404 (47)	1,410 (47)		104 (38)	101 (37)	
Other/unknown	146 (5)	146 (5)		9 (3)	12 (4)	
Insurance type, n (%)			0.0067			0.0861
Commercial	103 (3)	104 (4)		6 (2)	< 5[b]	
Medicare	2,642 (89)	2,636 (89)		174 (63)	176 (64)	
Unknown (Japan)	227 (8)	232 (8)		95 (35)	96 (35)	
Country, n (%)			0.0063			0.0076
Japan	227 (8)	232 (8)		95 (35)	96 (35)	
US	2,745 (92)	2,740 (92)		180 (65)	179 (65)	
BMI available, n (%)	1,071 (36)	939 (32)		85 (31)	100 (36)	
BMI, kg/m², mean (SD)	31.5 (7.0)	31.0 (7.1)	0.0669	27.4 (6)	27.5 (6.4)	0.0313
BMI category, kg/m², n (%)						
0–18.4	< 5[b]	5 (1)		< 5[b]	< 5[b]	
18.5–24.9	178 (17)	191 (20)		26 (31)	33 (33)	
25.0–29.9	318 (30)	257 (27)		36 (42)	40 (40)	
≥ 30	571 (53)	486 (52)		20 (24)	25 (25)	
CKD aetiology, n (%)						
Diabetic	1,794 (60)	1,828 (62)	0.0234	n/a	n/a	
Hypertensive	1,535 (52)	1,529 (51)	0.004	131 (48)	126 (46)	0.0364

Glomerular disease	821 (28)	794 (27)	0.0204	85 (31)	87 (32)	0.0157
Renal tubulo-interstitial disease	452 (15)	494 (17)	0.0386	47 (17)	46 (17)	0.0097
Comorbidities, n (%)						
Angina pectoris	637 (21)	642 (22)	0.0041	68 (25)	77 (28)	0.0742
Atrial fibrillation	802 (27)	797 (27)	0.0038	99 (36)	107 (39)	0.0600
Bradycardia	439 (15)	439 (15)	<0.0001	46 (17)	48 (17)	0.0193
Heart failure	1,278 (43)	1,232 (41)	0.0313	148 (54)	155 (56)	0.0511
Hypertension	2,890 (97)	2,885 (97)	0.0101	259 (94)	262 (95)	0.0487
Myocardial infarction	391 (13)	368 (12)	0.0232	29 (11)	32 (12)	0.0347
Stroke	942 (32)	892 (30)	0.0364	76 (28)	88 (32)	0.0953
Other cardiovascular disease	2,117 (71)	2,120 (71)	0.0022	181 (66)	185 (67)	0.0308
Anaemia	1,602 (54)	1,582 (53)	0.0135	135 (49)	133 (48)	0.0145
Hyperkalaemia	549 (18)	550 (19)	0.0009	50 (18)	52 (19)	0.0187
Type 2 diabetes	2,658 (89)	2,667 (90)	0.0099	n/a	n/a	
Medications, n (%)						
RASis	2,521 (85)	2,503 (84)	0.0258	217 (79)	225 (82)	0.0731
ARNIs	304 (10)	260 (9)	0.011	32 (12)	25 (9)	0.0834
β-blockers	1,759 (59)	1,671 (56)	0.0186	172 (63)	163 (59)	0.067
Calcium channel blockers	1,269 (43)	1,249 (42)	0.0027	124 (45)	123 (45)	0.0073
Diuretics	1,503 (51)	1,377 (46)	0.0143	159 (58)	155 (56)	0.0293
Antithrombotic agents	620 (21)	591 (20)	0.0027	54 (20)	58 (21)	0.0361
Statins	2,536 (85)	2,452 (83)	0.0138	173 (63)	174 (63)	0.0075
Antihyperkalaemic treatments	57 (2)	47 (2)	0.0154	7 (3)	6 (2)	0.0239
Antidiabetic treatments	2,333 (79)	2,283 (77)	0.0395	n/a	n/a	
Other medications[c]	1,506 (51)	1,461 (49)	0.0046	131 (48)	125 (45)	0.0437
eGFR available, n (%)	2,972 (100)	2,972 (100)		275 (100)	275 (100)	
eGFR, mL/min/1.73 m^2, mean (SD)	57.9 (19.7)	57.7 (19.1)	0.0133	52.8 (18)	52.6 (19)	0.0121
eGFR, mL/min/1.73 m^2, median (IQR)	53.7 (42.8-71.1)	54.8 (43.2-69.1)		50.1 (40.3-60.2)	49.5 (38.4-61.4)	

eGFR category, mL/min/1.73 m^2, n (%)						
≥ 60	1,154 (39)	1,169 (39)		71 (26)	76 (28)	
45–59	936 (31)	946 (32)		103 (37)	89 (32)	
30–44	798 (27)	735 (25)		93 (34)	92 (33)	
15–29	84 (3)	122 (4)		8 (3)	18 (7)	
UACR available, n (%)	2,972 (100)	2,972 (100)		275 (100)	275 (100)	
UACR, mg/g, mean (SD)	39.2 (45.5)	39.8 (84.9)	0.0092	26.8 (41.0)	29.1 (38.9)	0.0552
UACR, mg/g, median (IQR)	20.1 (7.0-55.8)	19.0 (7.0-52.0)		8.6 (1.6-32.4)	14.0 (2.2-39.4)	
UACR category, mg/g, n (%)						
0–29	1,739 (59)	1,813 (61)		202 (73)	189 (69)	
30–200	1,233 (41)	1,159 (39)		73 (27)	86 (31)	
With UACR/UPCR measure and no type 2 diabetes, n (%)						
UACR	285 (10)	282 (9)		275 (100)	275 (100)	
UPCR	186 (19)	181 (21)		182 (66)	167 (61)	
Healthcare provider, n (%)	2,968 (100)	2,961 (100)	0.0136	275 (100)	267 (97)	0.0075
Primary care	1,716 (58)	1,736 (59)		106 (39)	107 (40)	
Other	1,252 (42)	1,225 (41)		169 (61)	160 (60)	

[a]An SMD of <0.1 was considered good balance between covariates.

[b]Exact n numbers for pooled cohorts with n < 5 not shown in accordance with Clinformatics Data Mart patient privacy guidelines.

[c]Calcium, magnesium, nonsteroidal anti-inflammatory drugs, systemic corticosteroids or vitamin D

ARNI angiotensin-receptor neprilysin inhibitor, *BMI* body mass index, *CKD* chronic kidney disease, *eGFR* estimated glomerular filtration rate, *IQR* interquartile range, *n/a* not applicable, *RASi* renin-angiotensin system inhibitor, *SD* standard deviation, *UACR* urinary albumin-creatinine ratio, *UPCR* urinary protein-creatinine ratio

Table S5 *List of ICD-10 diagnosis codes used to define CKD.*

Description	ICD-10
CKD	N18
Renal tubulo-interstitial disease	N10–N16
End-stage renal disease	T86.1, Z49, Z94.0, Z99.2
Acute renal failure	N17
Hypertensive CKD	I12, I13
Diabetic CKD	E08.2, E11.2
Glomerular disease	N00, N01, N02, N03, N04, N05, N06, N07, N08, R80
CKD unspecified	N19, N25, N26, N99.0, Q60, Q62, Q63

All ICD-10 codes used to identify CKD were mapped to ICD-9 codes to identify cases coded using either system.

CKD chronic kidney disease, *ICD* International Classification of Diseases.