

**Table S5. Baseline characteristics in propensity-score matched cohorts of canagliflozin- and comparator-exposed patients**

			1:1 PS-matched Cohort Canagliflozin vs. DPP-4i			1:1 PS-matched Cohort Canagliflozin vs. GLP-1 RA			1:1 PS-matched Cohort Canagliflozin vs. Sulfonylureas		
Baseline patient characteristics			Canagliflozin (N=17,667)	DPP-4i (N=17,667)	St. Diff	Canagliflozin (N=20,539)	GLP-1 RA (N=20,539)	St. Diff	Canagliflozin (N=17,354)	Sulfonylureas (N=17,354)	St. Diff
<b>Demographics</b>											
Age	Mean (SD)		56.5 (10.6)	56.5 (10.7)	0.00	56.8 (10.9)	56.7 (10.8)	0.01	55.9 (10.5)	55.8 (10.5)	0.01
Female	N (%)		7,931 (44.9)	7,954 (45.0)	0.00	9,716 (47.3)	9,702 (47.2)	0.00	7,809 (45.0)	7,835 (45.2)	0.00
Index year											
	2013	N (%)	2,906 (16.5)	2,906 (16.5)	0.00	3,999 (19.5)	3,999 (19.5)	0.00	3,099 (17.9)	3,099 (17.9)	0.00
	2014	N (%)	6,797 (38.5)	6,797 (38.5)	0.00	8,380 (40.8)	8,380 (40.8)	0.00	6,804 (39.2)	6,804 (39.2)	0.00
	2015	N (%)	7,964 (45.1)	7,964 (45.1)	0.00	8,160 (39.7)	8,160 (39.7)	0.00	7,451 (42.9)	7,451 (42.9)	0.00
Region											
	MidWest	N (%)	3,885 (22.0)	3,876 (21.9)	0.00	4,601 (22.4)	4,582 (22.3)	0.00	3,701 (21.3)	3,637 (21.0)	0.01
	NorthEast	N (%)	1,452 (8.2)	1,380 (7.8)	0.02	1,809 (8.8)	1,841 (9.0)	-0.01	1,493 (8.6)	1,511 (8.7)	0.00
	South	N (%)	9,697 (54.9)	9,745 (55.2)	-0.01	10,978 (53.5)	10,985 (53.5)	0.00	9,604 (55.3)	9,644 (55.6)	0.00
	West	N (%)	2,607 (14.8)	2,639 (14.9)	-0.01	3,116 (15.2)	3,095 (15.1)	0.00	2,531 (14.6)	2,537 (14.6)	0.00
	Others	N (%)	26 (0.2)	27 (0.2)	0.00	35 (0.2)	36 (0.2)	0.00	25 (0.1)	25 (0.1)	0.00
<b>Comorbidities</b>											
Combined Comorbidity Score	Mean (SD)		0.1 (1.3)	0.2 (1.4)	0.02	0.2 (1.4)	0.2 (1.4)	-0.01	0.1 (1.3)	0.1 (1.4)	-0.01
Number of diagnoses	Mean (SD)		10.8 (6.9)	10.9 (7.2)	-0.01	11.0 (7.0)	11.1 (7.1)	-0.01	10.8 (6.9)	10.8 (7.0)	0.00
Obesity or overweight	N (%)		3,768 (21.3)	3,805 (21.5)	-0.01	4,572 (22.3)	4,582 (22.3)	0.00	3,673 (21.2)	3,677 (21.2)	0.00
Smoking	N (%)		1,333 (7.6)	1,304 (7.4)	0.01	1,553 (7.6)	1,523 (7.4)	0.01	1,321 (7.6)	1,297 (7.5)	0.01
Indicators of diabetes severity											
	Diabetic nephropathy	N (%)	1,217 (6.9)	1,216 (6.9)	0.00	1,530 (7.5)	1,524 (7.4)	0.00	1,103 (6.4)	1,104 (6.4)	0.00
	Diabetic neuropathy	N (%)	2,436 (13.8)	2,412 (13.7)	0.00	3,003 (14.6)	3,058 (14.9)	-0.01	2,352 (13.6)	2,323 (13.4)	0.00
	Diabetic retinopathy	N (%)	1,279 (7.2)	1,260 (7.1)	0.00	1,606 (7.8)	1,632 (8.0)	0.00	1,269 (7.3)	1,285 (7.4)	0.00
	Diabetes with peripheral circulatory disorders	N (%)	528 (3.0)	530 (3.0)	0.00	678 (3.3)	693 (3.4)	0.00	511 (2.9)	524 (3.0)	0.00
	Diabetic foot	N (%)	274 (1.6)	290 (1.6)	-0.01	341 (1.7)	355 (1.7)	-0.01	257 (1.5)	256 (1.5)	0.00
	Erectile dysfunction	N (%)	573 (3.2)	575 (3.3)	0.00	641 (3.1)	645 (3.1)	0.00	564 (3.3)	544 (3.1)	0.01
	Skin infections	N (%)	1,050 (5.9)	1,039 (5.9)	0.00	1,220 (5.9)	1,189 (5.8)	0.01	997 (5.8)	1,006 (5.8)	0.00
	Diabetes with unspecified complication	N (%)	556 (3.2)	544 (3.1)	0.00	703 (3.4)	723 (3.5)	-0.01	533 (3.1)	531 (3.1)	0.00

Number of diabetes drugs on the day of cohort entry	Mean (SD)	2.2 (0.9)	2.2 (0.9)	0.00	2.4 (1.0)	2.4 (1.0)	0.00	2.2 (0.9)	2.2 (0.9)	0.01
Diabetes drugs on the day of cohort entry										
Metformin	N (%)	10,429 (59.0)	10,508 (59.5)	-0.01	11,655 (56.8)	11,647 (56.7)	0.00	9,969 (57.4)	9,956 (57.4)	0.00
DPP-4i	N (%)	0 (0.0)	17,667 (100.0)	.	3,875 (18.9)	3,884 (18.9)	0.00	3,342 (19.3)	3,508 (20.2)	-0.02
GLP-1 RA	N (%)	1,047 (5.9)	1,008 (5.7)	0.01	0 (0.0)	20,539 (100.0)	.	1,760 (10.1)	1,634 (9.4)	0.02
Sulfonylureas	N (%)	4,862 (27.5)	4,945 (28.0)	-0.01	5,846 (28.5)	5,810 (28.3)	0.00	0 (0.0)	17,354 (100.0)	.
Insulin	N (%)	3,817 (21.6)	3,724 (21.1)	0.01	4,863 (23.7)	4,938 (24.0)	-0.01	4,102 (23.6)	3,913 (22.6)	0.03
Glitazones	N (%)	1,149 (6.5)	1,220 (6.9)	-0.02	1,431 (7.0)	1,421 (6.9)	0.00	1,123 (6.5)	1,126 (6.5)	0.00
Meglitinides	N (%)	99 (0.6)	100 (0.6)	0.00	149 (0.7)	152 (0.7)	0.00	131 (0.8)	128 (0.7)	0.00
Hypertension	N (%)	9,170 (51.9)	9,164 (51.9)	0.00	10,910 (53.1)	10,994 (53.5)	-0.01	8,821 (50.8)	8,873 (51.1)	-0.01
Ischemic heart disease	N (%)	2,018 (11.4)	1,975 (11.2)	0.01	2,431 (11.8)	2,454 (12.0)	0.00	1,895 (10.9)	1,906 (11.0)	0.00
History of coronary revascularization	N (%)	385 (2.2)	391 (2.2)	0.00	465 (2.3)	491 (2.4)	-0.01	351 (2.0)	340 (2.0)	0.00
Congestive heart failure	N (%)	563 (3.2)	594 (3.4)	-0.01	694 (3.4)	709 (3.5)	0.00	517 (3.0)	530 (3.1)	0.00
Atrial fibrillation	N (%)	507 (2.9)	517 (2.9)	0.00	622 (3.0)	613 (3.0)	0.00	500 (2.9)	488 (2.8)	0.00
Other cardiac dysrhythmia	N (%)	541 (3.1)	567 (3.2)	-0.01	656 (3.2)	659 (3.2)	0.00	524 (3.0)	566 (3.3)	-0.01
Stroke	N (%)	222 (1.3)	227 (1.3)	0.00	251 (1.2)	272 (1.3)	-0.01	202 (1.2)	195 (1.1)	0.00
TIA	N (%)	121 (0.7)	119 (0.7)	0.00	153 (0.7)	155 (0.8)	0.00	120 (0.7)	126 (0.7)	0.00
Peripheral vascular disease	N (%)	619 (3.5)	623 (3.5)	0.00	762 (3.7)	786 (3.8)	-0.01	624 (3.6)	595 (3.4)	0.01
Other cardiovascular disease	N (%)	883 (5.0)	922 (5.2)	-0.01	1,068 (5.2)	1,076 (5.2)	0.00	841 (4.9)	840 (4.8)	0.00
Edema	N (%)	818 (4.6)	840 (4.8)	-0.01	1,024 (5.0)	1,030 (5.0)	0.00	720 (4.2)	738 (4.3)	0.00
Disorders of fluid electrolyte and acid-base balance	N (%)	652 (3.7)	656 (3.7)	0.00	763 (3.7)	820 (4.0)	-0.01	612 (3.5)	590 (3.4)	0.01
Hypoglycemia	N (%)	1,781 (10.1)	1,814 (10.3)	-0.01	2,094 (10.2)	2,117 (10.3)	0.00	1,707 (9.8)	1,726 (10.0)	0.00
Hyperlipidemia	N (%)	8,600 (48.7)	8,556 (48.4)	0.01	10,246 (49.9)	10,342 (50.4)	-0.01	8,544 (49.2)	8,532 (49.2)	0.00
COPD	N (%)	742 (4.2)	764 (4.3)	-0.01	888 (4.3)	894 (4.4)	0.00	706 (4.1)	667 (3.8)	0.01
Asthma	N (%)	957 (5.4)	960 (5.4)	0.00	1,123 (5.5)	1,125 (5.5)	0.00	939 (5.4)	919 (5.3)	0.00
Pneumonia	N (%)	261 (1.5)	288 (1.6)	-0.01	320 (1.6)	314 (1.5)	0.00	250 (1.4)	237 (1.4)	0.01
Obstructive sleep apnea	N (%)	1,720 (9.7)	1,667 (9.4)	0.01	2,113 (10.3)	2,102 (10.2)	0.00	1,702 (9.8)	1,682 (9.7)	0.00
Osteoarthritis	N (%)	1,707 (9.7)	1,688 (9.6)	0.00	2,079 (10.1)	2,093 (10.2)	0.00	1,680 (9.7)	1,617 (9.3)	0.01
Other arthritis, arthropathies and musculoskeletal pain	N (%)	5,367 (30.4)	5,351 (30.3)	0.00	6,460 (31.5)	6,474 (31.5)	0.00	5,242 (30.2)	5,283 (30.4)	-0.01
Dorsopathies	N (%)	3,267 (18.5)	3,263 (18.5)	0.00	3,997 (19.5)	3,999 (19.5)	0.00	3,240 (18.7)	3,245 (18.7)	0.00
Non-diabetes kidney disease	N (%)	1,484 (8.4)	1,487 (8.4)	0.00	1,922 (9.4)	1,921 (9.4)	0.00	1,347 (7.8)	1,348 (7.8)	0.00
Liver disease	N (%)	816 (4.6)	838 (4.7)	-0.01	961 (4.7)	1,000 (4.9)	-0.01	789 (4.6)	788 (4.5)	0.00

Disorders of thyroid gland	N (%)	2,938 (16.6)	2,897 (16.4)	0.01	3,641 (17.7)	3,689 (18.0)	-0.01	3,093 (17.8)	3,073 (17.7)	0.00
Depression	N (%)	1,673 (9.5)	1,635 (9.3)	0.01	2,006 (9.8)	2,066 (10.1)	-0.01	1,617 (9.3)	1,561 (9.0)	0.01
Anxiety or sleep disorder	N (%)	3,369 (19.1)	3,352 (19.0)	0.00	4,002 (19.5)	4,038 (19.7)	0.00	3,326 (19.2)	3,292 (19.0)	0.01
Alcohol or drug abuse	N (%)	213 (1.2)	236 (1.3)	-0.01	242 (1.2)	261 (1.3)	-0.01	215 (1.2)	205 (1.2)	0.01
Frailty	N (%)	251 (1.4)	259 (1.5)	0.00	334 (1.6)	345 (1.7)	0.00	251 (1.5)	262 (1.5)	0.00
<b>Medications</b>										
No use of any antidiabetic agent in prior 6-month	N (%)	2,089 (11.8)	2,016 (11.4)	0.01	1,999 (9.7)	1,955 (9.5)	0.01	2,102 (12.1)	2,059 (11.9)	0.01
Past use of metformin	N (%)	2,780 (15.7)	2,728 (15.4)	0.01	3,465 (16.9)	3,453 (16.8)	0.00	2,823 (16.3)	2,859 (16.5)	-0.01
Past use of DPP-4i	N (%)	0 (0.0)	0 (0.0)	.	2,250 (11.0)	2,287 (11.1)	-0.01	1,567 (9.0)	1,617 (9.3)	-0.01
Past use of GLP-1 RA	N (%)	1,040 (5.9)	1,039 (5.9)	0.00	0 (0.0)	0 (0.0)	.	1,024 (5.9)	1,001 (5.8)	0.01
Past use of sulfonylureas	N (%)	1,828 (10.4)	1,811 (10.3)	0.00	2,256 (11.0)	2,311 (11.3)	-0.01	0 (0.0)	0 (0.0)	.
Past use of insulin	N (%)	1,524 (8.6)	1,510 (8.6)	0.00	1,808 (8.8)	1,826 (8.9)	0.00	1,616 (9.3)	1,628 (9.4)	0.00
Past use of glitazones	N (%)	508 (2.9)	477 (2.7)	0.01	623 (3.0)	642 (3.1)	-0.01	472 (2.7)	473 (2.7)	0.00
Past use of meglitinides	N (%)	77 (0.4)	72 (0.4)	0.00	120 (0.6)	109 (0.5)	0.01	91 (0.5)	98 (0.6)	-0.01
Alpha-glucosidase inhibitors	N (%)	79 (0.5)	79 (0.5)	0.00	115 (0.6)	110 (0.5)	0.00	64 (0.4)	79 (0.5)	-0.01
ACE inhibitors	N (%)	7,488 (42.4)	7,486 (42.4)	0.00	8,815 (42.9)	8,850 (43.1)	0.00	6,934 (40.0)	6,879 (39.6)	0.01
Angiotensin II receptor blockers	N (%)	4,460 (25.2)	4,515 (25.6)	-0.01	5,367 (26.1)	5,393 (26.3)	0.00	4,484 (25.8)	4,508 (26.0)	0.00
Beta blockers	N (%)	4,619 (26.1)	4,606 (26.1)	0.00	5,574 (27.1)	5,582 (27.2)	0.00	4,265 (24.6)	4,244 (24.5)	0.00
Calcium channel blockers	N (%)	3,517 (19.9)	3,505 (19.8)	0.00	4,198 (20.4)	4,178 (20.3)	0.00	3,273 (18.9)	3,266 (18.8)	0.00
Thiazides	N (%)	4,964 (28.1)	5,031 (28.5)	-0.01	5,966 (29.1)	5,936 (28.9)	0.00	4,629 (26.7)	4,593 (26.5)	0.00
Loop diuretics	N (%)	1,427 (8.1)	1,450 (8.2)	0.00	1,742 (8.5)	1,764 (8.6)	0.00	1,257 (7.2)	1,248 (7.2)	0.00
Other diuretics <sup>1</sup>	N (%)	762 (4.3)	784 (4.4)	-0.01	918 (4.5)	944 (4.6)	-0.01	717 (4.1)	720 (4.2)	0.00
Nitrates	N (%)	528 (3.0)	541 (3.1)	0.00	645 (3.1)	677 (3.3)	-0.01	470 (2.7)	469 (2.7)	0.00
Other antihypertensives	N (%)	719 (4.1)	734 (4.2)	0.00	880 (4.3)	887 (4.3)	0.00	617 (3.6)	609 (3.5)	0.00
Digoxin	N (%)	156 (0.9)	185 (1.1)	-0.02	195 (1.0)	199 (1.0)	0.00	130 (0.8)	118 (0.7)	0.01
Antiarrhythmics	N (%)	122 (0.7)	116 (0.7)	0.00	141 (0.7)	134 (0.7)	0.00	111 (0.6)	109 (0.6)	0.00
COPD or asthma medications	N (%)	2,120 (12.0)	2,145 (12.1)	0.00	2,542 (12.4)	2,535 (12.3)	0.00	2,096 (12.1)	2,056 (11.9)	0.01
Statins	N (%)	10,634 (60.2)	10,650 (60.3)	0.00	12,659 (61.6)	12,707 (61.9)	0.00	10,441 (60.2)	10,309 (59.4)	0.02
Other lipid-lowering drugs	N (%)	2,266 (12.8)	2,251 (12.7)	0.00	2,745 (13.4)	2,726 (13.3)	0.00	2,224 (12.8)	2,191 (12.6)	0.01
Anticoagulants	N (%)	600 (3.4)	611 (3.5)	0.00	701 (3.4)	707 (3.4)	0.00	557 (3.2)	552 (3.2)	0.00
Antiplatelets	N (%)	1,093 (6.2)	1,075 (6.1)	0.00	1,320 (6.4)	1,380 (6.7)	-0.01	988 (5.7)	1,001 (5.8)	0.00
Nonsteroidal anti-inflammatory drugs	N (%)	3,245 (18.4)	3,177 (18.0)	0.01	3,874 (18.9)	3,854 (18.8)	0.00	3,180 (18.3)	3,162 (18.2)	0.00
Opioids	N (%)	4,885 (27.7)	4,887 (27.7)	0.00	5,827 (28.4)	5,917 (28.8)	-0.01	4,690 (27.0)	4,671 (26.9)	0.00
Oral steroids	N (%)	2,644 (15.0)	2,655 (15.0)	0.00	3,088 (15.0)	3,049 (14.8)	0.01	2,627 (15.1)	2,529 (14.6)	0.02

Antidepressants	N (%)	4,237 (24.0)	4,167 (23.6)	0.01	5,167 (25.2)	5,169 (25.2)	0.00	4,227 (24.4)	4,138 (23.8)	0.01
Anticonvulsants	N (%)	2,435 (13.8)	2,406 (13.6)	0.00	2,950 (14.4)	2,972 (14.5)	0.00	2,338 (13.5)	2,311 (13.3)	0.00
Other psychotropic medications	N (%)	3,062 (17.3)	3,026 (17.1)	0.01	3,640 (17.7)	3,642 (17.7)	0.00	3,036 (17.5)	2,934 (16.9)	0.02
<b>Measures of healthcare utilization</b>										
Any hospitalization within prior 30 days	N (%)	197 (1.1)	181 (1.0)	0.01	215 (1.1)	215 (1.1)	0.00	175 (1.0)	170 (1.0)	0.00
Any hospitalization during prior 31-183 days	N (%)	696 (3.9)	715 (4.1)	-0.01	800 (3.9)	845 (4.1)	-0.01	631 (3.6)	646 (3.7)	0.00
N hospital days	Mean (SD)	0.2 (1.6)	0.3 (2.1)	-0.03	0.2 (1.4)	0.2 (1.5)	0.00	0.2 (1.6)	0.3 (2.6)	-0.03
Number of emergency department visits	Mean (SD)	0.2 (0.7)	0.2 (0.7)	-0.01	0.2 (0.7)	0.2 (0.7)	-0.02	0.2 (0.7)	0.2 (0.7)	-0.01
Number of any physician visits	Mean (SD)	4.4 (3.4)	4.4 (3.4)	0.00	4.6 (3.5)	4.6 (3.5)	-0.01	4.4 (3.4)	4.4 (3.4)	0.01
Visit to endocrinologist	N (%)	1,968 (11.1)	2,065 (11.7)	-0.02	2,822 (13.7)	2,859 (13.9)	-0.01	2,299 (13.3)	2,292 (13.2)	0.00
Visit to cardiologist	N (%)	1,355 (7.7)	1,392 (7.9)	-0.01	1,631 (7.9)	1,659 (8.1)	-0.01	1,366 (7.9)	1,455 (8.4)	-0.02
Number of electrocardiograms received	Mean (SD)	0.3 (0.7)	0.3 (0.8)	-0.01	0.3 (0.7)	0.3 (0.8)	-0.01	0.3 (0.7)	0.3 (0.8)	-0.01
Number of distinct prescriptions	Mean (SD)	9.6 (5.2)	9.6 (5.2)	0.01	10.1 (5.2)	10.2 (5.2)	-0.03	9.5 (5.3)	9.4 (5.0)	0.03
Number of preventive services received	Mean (SD)	0.6 (0.8)	0.6 (0.8)	0.00	0.6 (0.8)	0.6 (0.8)	0.01	0.6 (0.8)	0.6 (0.8)	0.01
Number of hemoglobin of HbA1c tests ordered	Mean (SD)	1.3 (0.8)	1.3 (0.8)	-0.01	1.3 (0.9)	1.3 (0.9)	-0.01	1.3 (0.8)	1.3 (0.8)	0.00
Number of creatinine tests ordered	Mean (SD)	0.0 (0.2)	0.0 (0.2)	0.00	0.0 (0.2)	0.0 (0.2)	0.00	0.0 (0.2)	0.0 (0.2)	0.00
Number of BUN tests ordered	Mean (SD)	1.0 (1.0)	1.0 (1.1)	-0.03	1.0 (1.0)	1.0 (1.1)	-0.02	1.0 (1.0)	1.0 (1.1)	0.00
Number of lipid tests ordered	Mean (SD)	0.9 (0.8)	0.9 (0.8)	0.00	0.9 (0.8)	0.9 (0.8)	0.00	1.0 (0.8)	1.0 (0.8)	0.00
<b>Laboratory tests</b>										
Patients with HbA1c available	N (%)	6,591 (37.3)	6,806 (38.5)	-0.02	7,727 (37.6)	7,338 (35.7)	0.04	6,436 (37.1)	6,557 (37.8)	-0.01
HbA1c, %	Mean (SD)	8.8 (1.9)	8.8 (1.9)	0.02	8.8 (1.8)	8.8 (1.9)	0.02	8.7 (1.9)	8.9 (2.0)	-0.10
Patients with creatinine available	N (%)	7,023 (39.8)	7,198 (40.7)	-0.02	8,217 (40.0)	7,909 (38.5)	0.03	6,959 (40.1)	6,906 (39.8)	0.01
Creatinine, mg/dL	Mean (SD)	0.9 (0.2)	1.0 (0.3)	-0.16	0.9 (0.2)	1.0 (0.3)	-0.16	0.9 (0.2)	1.0 (0.3)	-0.11
Patients with eGFR available	N (%)	7,023 (39.8)	7,198 (40.7)	-0.02	8,217 (40.0)	7,909 (38.5)	0.03	6,959 (40.1)	6,906 (39.8)	0.01
eGFR, mL/min/1.73m <sup>2</sup>	Mean (SD)	100.4 (18.3)	97.8 (22.2)	0.13	99.3 (18.7)	97.4 (21.5)	0.09	100.9 (18.1)	98.8 (21.3)	-0.11
Patients with BUN available	N (%)	6,941 (39.3)	7,101 (40.2)	-0.02	8,106 (39.5)	7,814 (38.0)	0.03	6,885 (39.7)	6,839 (39.4)	0.01
BUN, mg/dL	Mean (SD)	15.7 (5.7)	16.2 (7.2)	-0.07	15.9 (5.9)	16.4 (6.6)	-0.08	15.6 (5.6)	15.9 (6.5)	-0.05
Patients with LDL available	N (%)	5,645 (32.0)	5,789 (32.8)	-0.02	6,605 (32.2)	6,317 (30.8)	0.03	5,568 (32.1)	5,634 (32.5)	-0.01
LDL, mg/dL	Mean (SD)	95.0 (36.9)	97.0 (36.4)	-0.06	94.4 (36.0)	94.5 (36.0)	0.00	94.2 (36.2)	97.6 (37.0)	-0.09

DPP-4i: DPP-4 inhibitors; GLP-1 RA: GLP-1 receptor agonists; PS: propensity score; St. Diff: Standardized difference; SD: standard deviation; TIA: transient ischemic attack; COPD: Chronic Obstructive Pulmonary Disease; ACE: angiotensin converting enzyme; HbA1c: Hemoglobin A1c; BUN: blood urea nitrogen; eGFR: estimated glomerular filtration rate; LDL: low-density lipoprotein

<sup>1</sup> Other diuretics included eplerenone, spironolactone, amiloride, and triamterene