

Supplementary Table 1. Procedure codes used to identify maintenance hemodialysis.

Procedure category	Code (Japanese claims system)
Hemodialysis procedure codes (J038)	140057810, 140057910, 140058010, 140058110, 140058210, 140058310, 140058410, 140058510, 140058610, 140007710
Dialysis initiation add-on	140058770, 140058870

Supplementary Table 2. Comorbidities and Definitions.

Comorbidity	Definition
Hypertension	ICD-10 codes I10–I15 or receipt of antihypertensive medications (codes listed in Supplementary Table S3)
Diabetes mellitus	ICD-10 codes E10–E14 or receipt of antidiabetic medications or insulin (codes listed in Supplementary Table S3)
Dyslipidemia	ICD-10 code E78.x
Atrial fibrillation	ICD-10 code I48.x
Heart failure	ICD-10 code I50.x
Ischemic heart disease	ICD-10 codes I20–I25
Peripheral artery disease	ICD-10 codes I70.2, I70.9, I73.1, I73.9
Cerebrovascular disease	ICD-10 codes I60–I69
Malignant tumors	ICD-10 codes C00–C97, D00–D09

Supplementary Table 3. Medication Definitions and Corresponding 7-digits Japanese Drug Codes.

Medications	7-digits Japanese Drug Codes
Antiplatelet	3399xxx
Anticoagulation	3332001, 3339001, 3339002, 3339003, 3339004
Steroid	2452xxx, 2454xxx, 2456xxx, 2459xxx
	3999002, 3999004, 3999005, 3999014, 3999016, 3999017, 3999020, 3999022, 3999029, 3999034, 3999038, 3999042, 3999043, 3999046, 3999048, 3999053, 3999056, 3999057, 3999406, 3999416, 3999424, 3999426, 3999429, 3999431, 3999433, 3999434, 3999437, 3999439, 3999441, 3999442, 3999444, 3999445, 3999446, 3999448, 3999450, 3999451, 3999456, 3999457, 3999459, 3999462, 3999463, 3999464, 3999466, 3999467, 3999468
Immunosuppressants	
Inotropic agents	2119xxx
Red blood cell transfusion	6341403, 6341404, 6342402, 6342403, 6342405, 6342408, 6342410, 6342413, 6342414, 6342415

Supplementary Table 4. Drug Codes Used for Defining Hypertension and Diabetes Mellitus.

Mellitus.

Drug Class	Japanese Drug Codes
Insulin	2492403, 2492405, 2492406, 2492407, 2492409, 2492410, 2492411, 2492413, 2492414, 2492415, 2492416, 2492417, 2492418, 2492419, 2492420, 2492421, 2492422, 2492423, 2492500, 3969500, 3969501
antidiabetic drugs	2499014, 2499410, 2499411, 2499415, 2499416, 2499418, 2499422, 3961001, 3961003, 3961004, 3961006, 3961008, 3962001, 3962002, 3969003, 3969004, 3969006, 3969007, 3969008, 3969009, 3969010, 3969011, 3969012, 3969013, 3969014, 3969015, 3969018, 3969019, 3969020, 3969022, 3969023, 3969026, 3969100, 3969101, 3969102, 3969103, 3969104, 3969105, 3969106, 3969107, 3969108, 3969109
Renin–angiotensin–aldosterone system inhibitors	2144001, 2144002, 2144004, 2144005, 2144006, 2144007, 2144008, 2144009, 2144010, 2144011, 2144012, 2149039, 2149040, 2149041, 2149042, 2149044, 2149046, 2149047, 2149110, 2149111, 2149112, 2149113, 2149114, 2149115, 2149116, 2149117, 2149118, 2149119, 2149120, 2149122, 2190041
Calcium channel blockers	2129011, 2129402, 2149019, 2149022, 2149027, 2149030, 2149035, 2149037, 2149114, 2149116, 2149117, 2149118, 2149120, 2149121, 2149122, 2149400, 2171006, 2171008, 2171014, 2171019, 2171020, 2171021, 2171022, 2171405, 2190101, 2190102, 2190103, 2190104
β-blockers	1319701, 1319702, 1319733, 1319817, 1319819, 1319820, 1319821, 1319822, 1319823, 1319824, 2123001, 2123002, 2123004, 2123005, 2123008, 2123009, 2123011, 2123015, 2123016, 2123402, 2123404, 2123405, 2129013, 2149009, 2149010, 2149011, 2149014, 2149025, 2149029, 2149031, 2149032, 2149036, 2149700, 2900003
Thiazide diuretics	2132003, 2132004, 2132006, 2149103, 2149110, 2149111, 2149112, 2149113, 2149119, 2149122

Supplementary Table 5. Red blood cell transfusion during the index hospitalization.

	SAVR	TAVI
Patients receiving in-hospital RBC transfusion, n (%)	666 (97.5%)	332 (34.4%)
Median RBC transfusion days (IQR)	2 (1–3)	1 (1–2)

Abbreviations: IQR, interquartile range; RBC, red blood cell, SAVR, surgical aortic valve

replacement; TAVI, transcatheter aortic valve implantation.

Supplementary Table 6. In-hospital mortality by age category.

Age (years)	SAVR	TAVI
<70	9/222 (4.1%)	0/69 (0.0%)
70–79	22/351 (6.3%)	12/356 (3.4%)
80–89	8/108 (7.4%)	12/487 (2.5%)
≥90	1/2 (50.0%)	5/54 (9.3%)

Values are presented as number of deaths/number of patients (%).

Abbreviations: SAVR, surgical aortic valve replacement; TAVI, transcatheter aortic valve implantation.

Supplementary Table 7. Distribution of hospitals according to procedural capability.

Hospital type	Hospitals (n)	Patients (n)
Both TAVI and SAVR	133	1360
TAVI only	0	0
SAVR only	102	208
Missing hospital code	-	81

Abbreviations: TAVI, transcatheter aortic valve implantation; SAVR, surgical aortic valve replacement.

Supplementary Table 8. Concomitant cardiac procedures identified during the index hospitalization.

Procedure	SAVR	TAVI
CABG	401	3
Atrial fibrillation surgery	100	0
PCI	4	16
Other valve surgery *	3	1
Aortic surgery [†]	1	0

* Defined using procedure codes indicating concomitant surgery involving ≥2 cardiac valves, including valve replacement and valve repair procedures.

† Includes aortic root replacement, ascending aortic replacement, and related aortic surgical procedures.

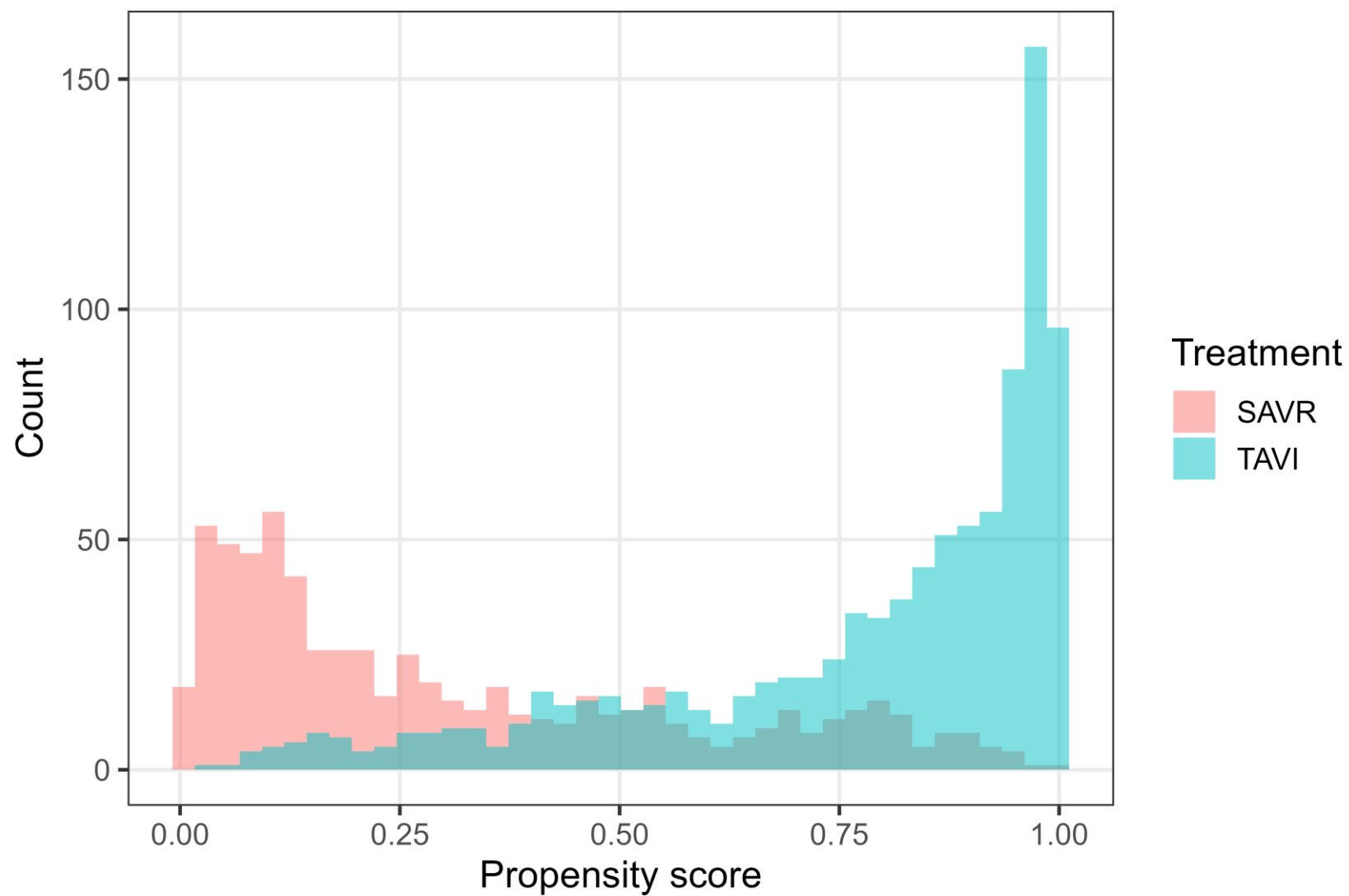
Abbreviations: CABG, coronary artery bypass grafting; PCI, percutaneous coronary intervention; SAVR, surgical aortic valve replacement; TAVI, transcatheter aortic valve implantation.

Supplementary Table 9. Procedure codes used to identify concomitant procedures.

Procedure category	Included procedures	Code (Japanese claims system)
CABG	Coronary artery bypass grafting	150145910, 150146010
Atrial fibrillation surgery	Maze procedure, surgical left atrial appendage closure	150415010, 150424650, 150275610
PCI	Coronary angioplasty or coronary stent implantation	150374910, 150375010, 150375110, 150375210, 150375310, 150375410
Other valve surgery *	Multivalve replacement or repair procedures	150141610, 150141710, 150448810, 150279510, 150279610, 150399810, 150406510
Aortic surgery †	Annular enlargement, aortic root replacement, valve-sparing root replacement, ascending aortic replacement, arch replacement, sinus of Valsalva surgery, and related aortic procedures	150141510, 150150010, 150152210, 150244910, 150245010, 150275910, 150320710, 150359510, 150359610, 150359710, 150359810, 150359910, 150381150, 150381250, 150381650, 150381750

Abbreviations: CABG, coronary artery bypass grafting; PCI, percutaneous coronary intervention.

Supplementary Figure 1. Propensity score distribution by treatment group.



Supplementary Figure 2. Covariate balance before and after inverse probability of treatment weighting (IPTW).

