

Supplemental Online Content

Supplemental Table 1. Baseline characteristics in patients with death events according to presence or absence of cause of death (*n* = 9,064)

| Variable | Cause of death | | <i>P</i> |
|--------------------------------------|--------------------------------|-------------------------------|----------|
| | Present (<i>n</i> = 4,727) | Absent (<i>n</i> = 4,337) | |
| Age (years) | 71.8±10.8 | 70.0±10.8 | <0.001 |
| Sex (male) | 4,672 (98.8) | 4,275 (98.6) | 0.26 |
| Race (African-American) | 1,023 (21.6) | 1,111 (25.6) | <0.001 |
| Marital status (Married) | 2,552 (54.0) | 2,264 (52.2) | <0.001 |
| Systolic BP (mmHg) | 137.8±17.0 | 140.3±16.3 | <0.001 |
| Diastolic BP (mmHg) | 70.8±10.4 | 72.6±10.2 | <0.001 |
| Body mass index (kg/m ²) | 28.9±6.3 | 29.4±6.7 | <0.001 |
| Hypertension | 4,552 (96.3) | 4,236 (97.7) | <0.001 |
| Diabetes mellitus | 3,436 (72.7) | 3,228 (74.4) | 0.061 |
| Cardiovascular disease ^a | 2,698 (57.1) | 2,312 (53.3) | <0.001 |
| Congestive heart failure | 3,155 (66.7) | 2,730 (63.0) | <0.001 |
| Peripheral vascular disease | 2,331 (49.3) | 2,039 (47.0) | 0.029 |
| Chronic pulmonary disease | 2,663 (56.3) | 2,215 (51.1) | <0.001 |
| Liver disease | 654 (13.8) | 608 (14.0) | 0.80 |
| Dementia | 173 (3.7) | 164 (3.8) | 0.76 |
| Malignancies | 1,436 (30.4) | 1,219 (28.1) | 0.018 |
| Charlson comorbidity index | 6 (4, 7) | 5 (4, 7) | <0.001 |
| Vascular access type (catheter) | 3,739 (79.1) | 3,225 (74.4) | <0.001 |
| Medications | | | |
| ACEIs/ARBs | 2,940 (62.2) | 2,737 (63.1) | 0.37 |
| β-blockers | 3,719 (78.7) | 3,463 (79.9) | 0.17 |
| Calcium channel blockers | 3,110 (65.8) | 3,079 (71.0) | <0.001 |
| Diuretics | 4,004 (84.7) | 3,646 (84.1) | 0.40 |
| Vasodilators | 209 (4.4) | 219 (5.1) | 0.16 |
| Statins | 3,366 (71.2) | 3,139 (72.4) | 0.22 |
| Vitamin D analogs | 1,443 (30.5) | 1,463 (33.7) | 0.001 |
| ESAs | 1,755 (37.1) | 1,574 (36.3) | 0.41 |
| CV medication adherence (>80%) | 3,746 (79.3) | 3,358 (77.4) | 0.11 |
| Laboratory parameters ^b | | | |

| | | | |
|------------------------------------|-------------------|-------------------|-------|
| Serum albumin (g/dL) | 3.3±0.6 | 3.4±0.6 | 0.053 |
| Blood hemoglobin (g/dL) | 10.9±1.4 | 10.9±1.4 | 0.92 |
| eGFR (mL/min/1.73 m ²) | 17.6 (13.0, 25.1) | 17.0 (12.7, 24.8) | 0.60 |

Data are presented as number (percentage), mean ± standard deviation, or median (25th, 75th percentiles).

^aCardiovascular disease include coronary artery disease, angina, myocardial infarction, or cerebrovascular disease.

^bAll laboratory results averaged over the one-year prelude period.

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BP; blood pressure; CV, cardiovascular; eGFR, estimated glomerular filtration rate; ESA, erythropoietin stimulating agent

Supplemental Table 2. Adjusted hazard ratios (95% CIs) for all-cause mortality after dialysis initiation by quartiles of prelude SBPV with further adjustment for laboratory data

| | Quartile of SBPV (mmHg) | | | |
|-----------------------|-------------------------|---------------------|---------------------|-----------------------|
| | Q1 (lowest) <11.6 | Q2 11.6 to <15.7 | Q3 15.7 to <20.4 | Q4 (highest) ≥20.4 |
| Patients (<i>n</i>) | 4,433 | 4,432 | 4,431 | 4,433 |
| Events | 2,402 (54.2) | 2,243 (50.6) | 2,172 (49.0) | 2,247 (50.7) |
| Model 5 | 1 [reference] | 0.99 (0.93–1.05) | 0.96 (0.90–1.03) | 1.05 (0.98–1.13) |

Data are presented as number (percentage) or hazard ratio (95% CI) unless otherwise specified.

Model 5 is adjusted for the variables in model 4 (age, sex, race/ethnicity, marital status, comorbidities [hypertension, cardiovascular disease, congestive heart failure, peripheral vascular disease, lung disease, diabetes mellitus, liver disease, and Charlson comorbidity index], systolic BP, BMI, and eGFR averaged over the one-year prelude period, medications [ACEIs/ARBs, β -blockers, calcium channel blockers, vasodilators, diuretics, statins, and ESAs], cardiovascular medication adherence, and type of vascular access [arteriovenous fistula, arteriovenous graft, or catheter]) plus serum albumin and blood hemoglobin averaged over the one-year prelude period

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; BP, blood pressure; eGFR, estimated glomerular filtration rate; ESA, erythropoietin stimulating agent; SBPV, systolic blood pressure variability

Supplemental Table 3. Adjusted subhazard ratios (95% CIs) for (A) cardiovascular and (B) infection-related mortality after dialysis initiation by quartiles of prelude SBPV with further adjustment for laboratory data**(A) Cardiovascular**

| | Quartile of SBPV (mmHg) | | | |
|-------------------------------|-------------------------|---------------------|---------------------|-----------------------|
| | Q1 (lowest) <11.6 | Q2 11.6 to <15.7 | Q3 15.7 to <20.4 | Q4 (highest) ≥20.4 |
| Patients (<i>n</i>) | 4,433 | 4,432 | 4,431 | 4,433 |
| Primary events | 664 (15.0) | 605 (13.7) | 537 (12.1) | 557 (12.6) |
| Competing events ^a | 631 (14.2) | 599 (13.5) | 571 (12.9) | 563 (12.7) |
| Model 5 | 1 [reference] | 0.98 (0.87–1.10) | 0.90 (0.79–1.02) | 1.01 (0.89–1.15) |

(B) Infection-related

| | Quartile of SBPV (mmHg) | | | |
|-------------------------------|-------------------------|---------------------|---------------------|-----------------------|
| | Q1 (lowest) <11.6 | Q2 11.6 to <15.7 | Q3 15.7 to <20.4 | Q4 (highest) ≥20.4 |
| Patients (<i>n</i>) | 4,433 | 4,432 | 4,431 | 4,433 |
| Primary events | 138 (3.1) | 143 (3.2) | 130 (2.9) | 163 (3.7) |
| Competing events ^a | 1,157 (26.1) | 1,061 (23.9) | 978 (22.1) | 957 (957) |
| Model 5 | 1 [reference] | 1.03 (0.80–1.32) | 0.96 (0.73–1.25) | 1.32 (1.02–1.71) |

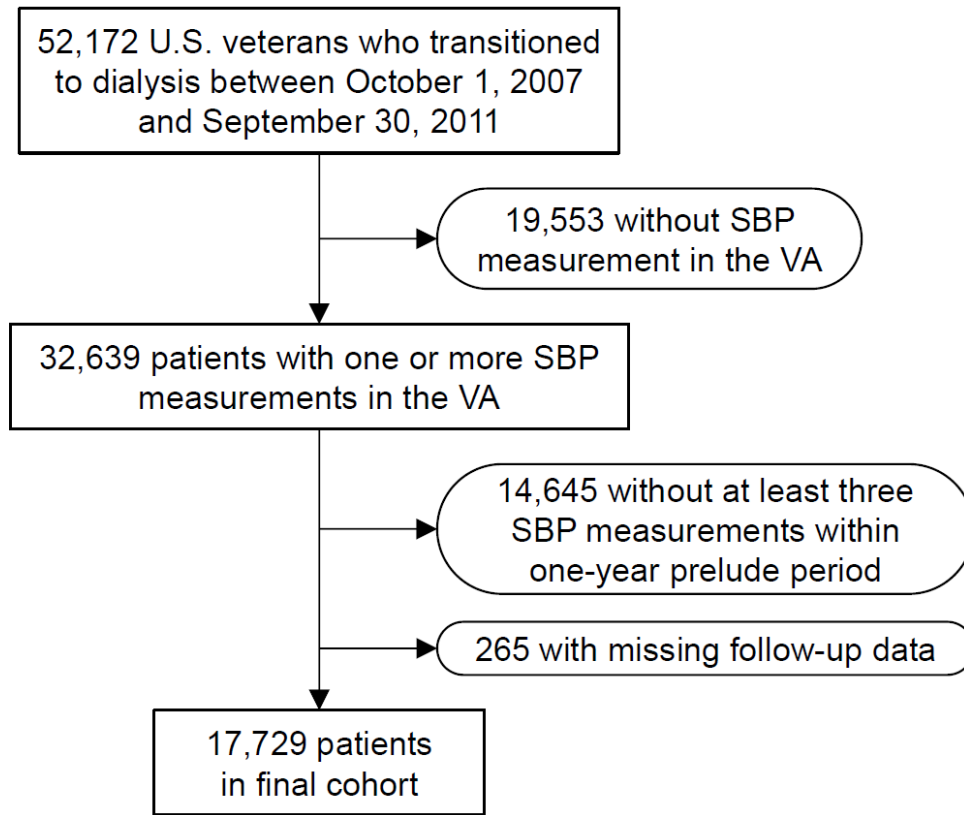
Data are presented as number (percentage) or hazard ratio (95% CI) unless otherwise specified.

Model 5 is adjusted for the variables in model 4 (age, sex, race/ethnicity, marital status, comorbidities [hypertension, cardiovascular disease, congestive heart failure, peripheral vascular disease, lung disease, diabetes mellitus, liver disease, and Charlson comorbidity index], systolic BP, BMI, and eGFR averaged over the one-year prelude period, medications [ACEIs/ARBs, β-blockers, calcium channel blockers, vasodilators, diuretics, statins, and ESAs], cardiovascular medication adherence, and type of vascular access [arteriovenous fistula, arteriovenous graft, or catheter]) plus serum albumin and blood hemoglobin averaged over the one-year prelude period

^aCompeting events include deaths from other causes.

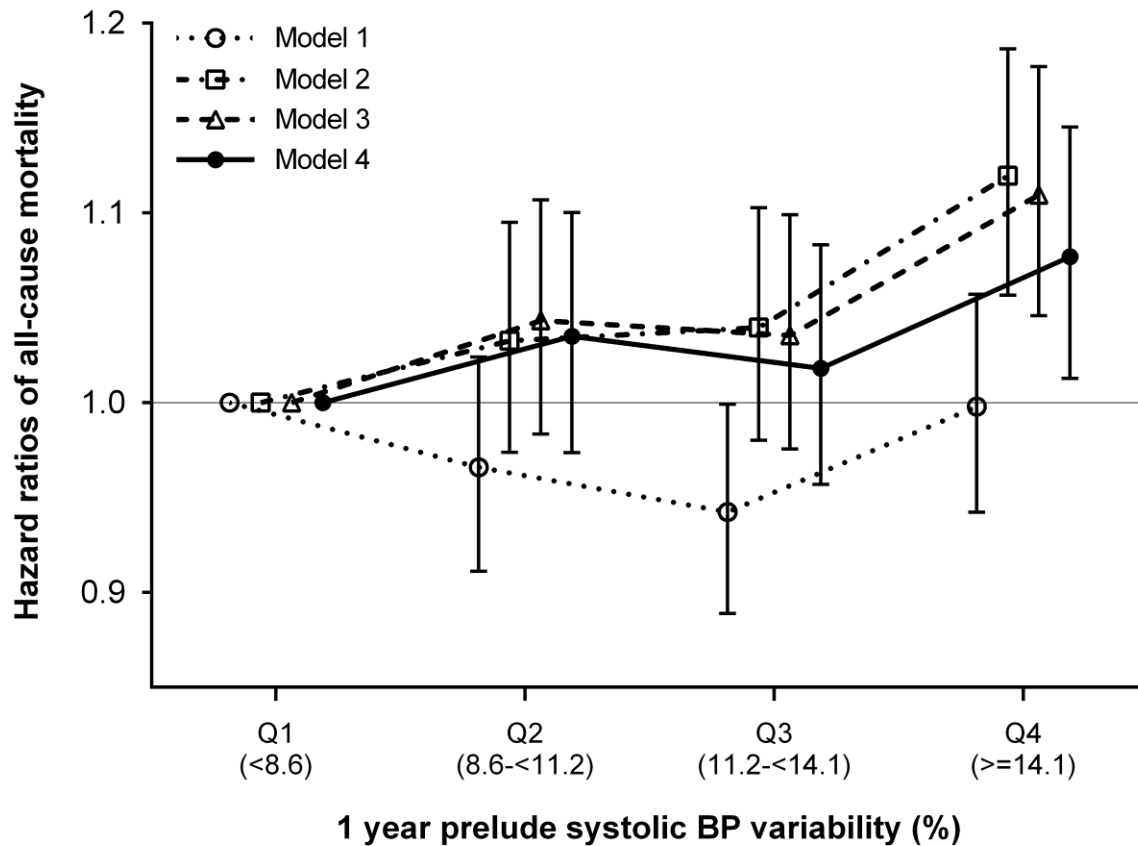
Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; BP, blood pressure; eGFR, estimated glomerular filtration rate; ESA, erythropoietin stimulating agent; SBPV, systolic blood pressure variability

Supplemental Figure 1. Flow chart of the study population



Abbreviations: SBP, systolic blood pressure; VA Veterans Affairs

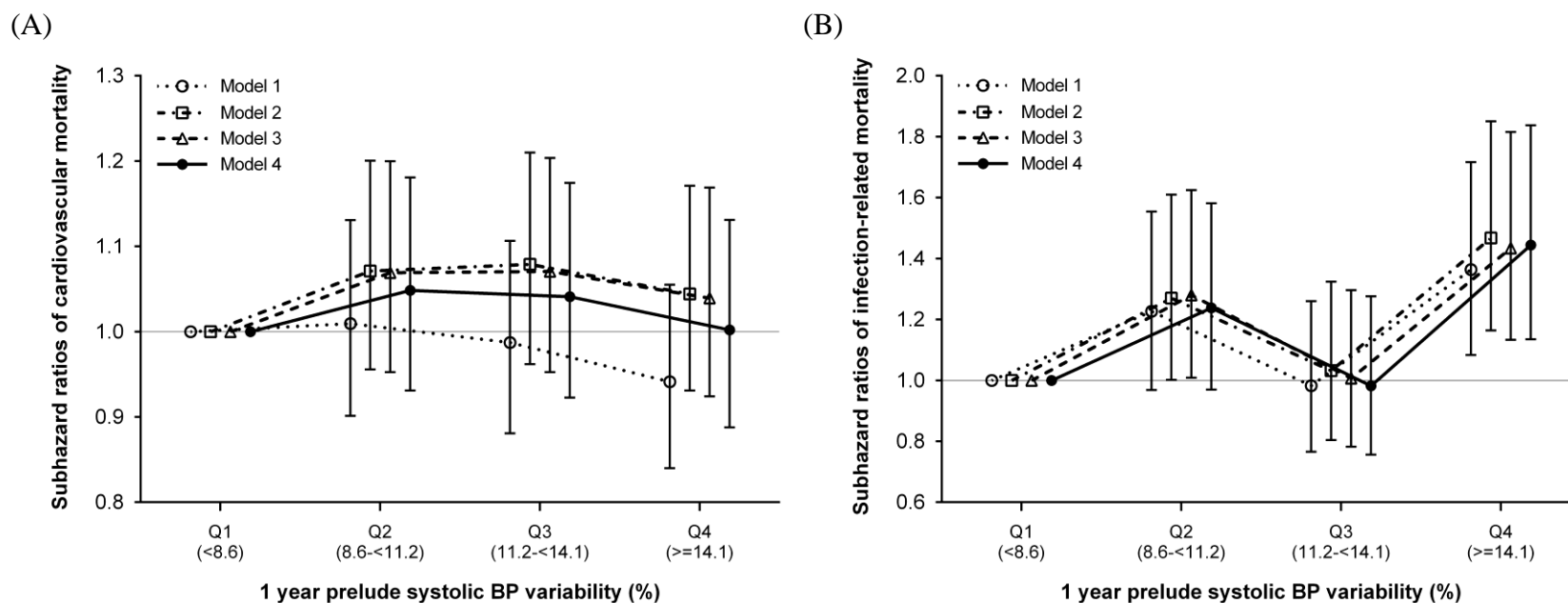
Supplemental Figure 2. Association of prelude SBPV (defined as coefficient of variation of systolic BP) with all-cause mortality after dialysis initiation



Models are as follows: model 1 is unadjusted; model 2 is adjusted for age, sex, race/ethnicity, and marital status; model 3 is adjusted for the variables in model 2 plus comorbidities (hypertension, cardiovascular disease, congestive heart failure, peripheral vascular disease, lung disease, diabetes mellitus, liver disease, and Charlson comorbidity index) and systolic BP, BMI, and eGFR averaged over the one-year prelude period; and model 4 is adjusted for the variables in model 3 plus medications (ACEIs/ARBs, β -blockers, calcium channel blockers, vasodilators, diuretics, statins, and ESAs), cardiovascular medication adherence, and type of vascular access (arteriovenous fistula, arteriovenous graft, or catheter).

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; BP, blood pressure; eGFR, estimated glomerular filtration rate; ESA, erythropoietin stimulating agent; SBPV, systolic blood pressure variability

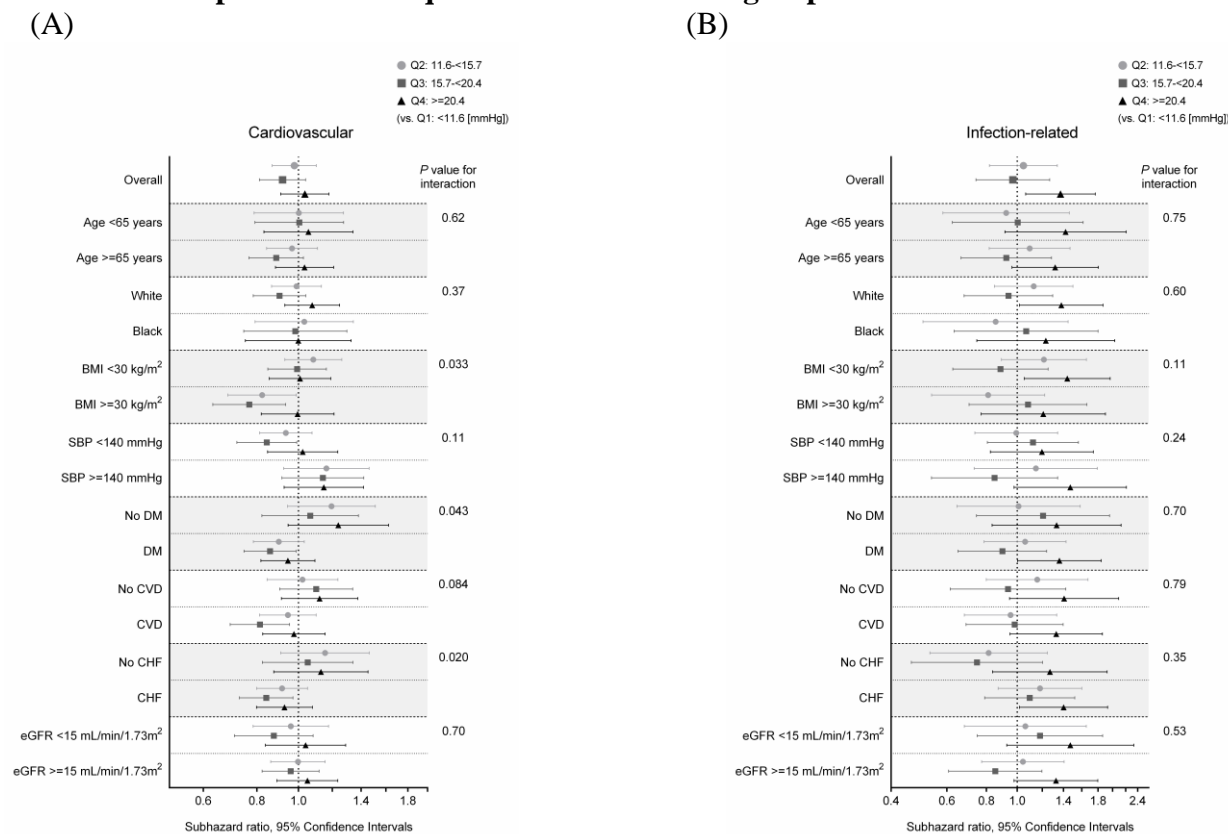
Supplemental Figure 3. Association of prelude SBPV (defined as coefficient of variation of systolic BP) with (A) cardiovascular and (B) infection-related mortality after dialysis initiation



Models are as follows: model 1 is unadjusted; model 2 is adjusted for age, sex, race/ethnicity, and marital status; model 3 is adjusted for the variables in model 2 plus comorbidities (hypertension, cardiovascular disease, congestive heart failure, peripheral vascular disease, lung disease, diabetes mellitus, liver disease, and Charlson comorbidity index) and systolic BP, BMI, and eGFR averaged over the one-year prelude period; and model 4 is adjusted for the variables in model 3 plus medications (ACEIs/ARBs, β -blockers, calcium channel blockers, vasodilators, diuretics, statins, and ESAs), cardiovascular medication adherence, and type of vascular access (arteriovenous fistula, arteriovenous graft, or catheter).

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; BP, blood pressure; eGFR, estimated glomerular filtration rate; ESA, erythropoietin stimulating agent; SBPV, systolic blood pressure variability

Supplemental Figure 4. Adjusted subhazard ratios (95% CIs) of (A) cardiovascular and (B) infection-related mortality after dialysis initiation associated with prelude SBPV quartiles in selected subgroups



Model is adjusted for age, sex, race/ethnicity, marital status, comorbidities (hypertension, cardiovascular disease, congestive heart failure, peripheral vascular disease, lung disease, diabetes mellitus, liver disease, and Charlson comorbidity index), systolic BP, BMI and eGFR averaged over the one-year prelude period, medications (ACEIs/ARBs, β -blockers, calcium channel blockers, vasodilators, diuretics, statins, and ESAs), cardiovascular medication adherence, and type of vascular access (arteriovenous fistula, arteriovenous graft, or catheter).

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; BP, blood pressure; CHF, congestive heart failure; CVD, cardiovascular disease; DM, diabetes mellitus; eGFR, estimated glomerular filtration rate; ESA, erythropoietin stimulating agent; SBPV, systolic blood pressure variability