

Supplementary materials

Table S1. Univariable Cox regression assessing association between exposure/confounders (over 3-year prelude) and all-cause mortality within 6-months following dialysis initiation

Exposure/confounders	Reference	Hazard ratio (95% CI)
K variability (0.31-<0.41)	<0.31	0.88 (0.81-0.95)*
K variability (0.41-<0.52)	<0.31	0.87 (0.80-0.94)*
K variability (\geq 0.52)	<0.31	0.94 (0.87-1.02)
K intercept (unit=1 mEq/L)		0.98 (0.92-1.05)
K slope (unit=0.1 mEq/L/year)		0.96 (0.95-0.98)*
Age (unit=10 years)		1.64 (1.59-1.69)*
Sex (Males)	Female	1.81 (1.37-2.37)*
Race (Black)	White	0.53 (0.49-0.57)*
Race (Other)	White	0.52 (0.42-0.65)*
Marital status (Unmarried)	Married	0.89 (0.84-0.95)*
Smoking status (Current)	Never	1.03 (0.95-1.10)
Smoking status (Past)	Never	1.22 (1.14-1.31)*
Congestive heart failure		1.93 (1.81-2.07)*
Peripheral vascular disease		1.62 (1.52-1.71)*
Cerebrovascular disease		1.59 (1.50-1.68)*
Lung disease		1.74 (1.64-1.85)*
Peptic ulcer disease		1.47 (1.35-1.59)*
Paraplegia/Hemiplegia		1.28 (1.15-1.43)*
Anemia		1.25 (1.15-1.36)*
Atrial fibrillation		2.22 (1.09-2.35)*
Hypertension		0.59 (0.47-0.76)*
Ischemic heart disease		1.81 (1.69-1.94)*
Diabetes		0.88 (0.82-0.94)*
Malignancies		1.64 (1.55-1.74)*
Charlson comorbidity index (unit=1 comorbidity)		1.14 (1.13-1.15)*
Body Mass Index (unit=5 kg/m ²)		0.82 (0.80-0.84)*
Length of hospitalizations (unit=7 days)		1.02 (1.02-1.02)*
Vascular access (Catheter)	Other	2.75 (2.52-3.0)*
RAASi		0.83 (0.78-0.89)*
SPS		0.88 (0.82-0.94)*
Loop diuretics		0.88 (0.82-0.94)*
K sparing diuretics		1.42 (1.33-1.53)*
Digoxin		2.32 (2.14-2.51)*
Beta blocker		0.89 (0.83-0.96)*
Calcium channel blockers		0.47 (0.44-0.50)*
Insulin		0.76 (0.72-0.81)*
Oral hypoglycemics		0.93 (0.88-0.99)*

Calcineurin inhibitors	1.03 (0.84-1.26)
Trimethoprim	1.49 (1.33-1.64)*
Azole antifungals	1.01 (0.95-1.08)
eGFR (unit=5 ml/min/1.73 m ²)	1.09 (1.09-1.10)*
K measurements (unit=5 measurements)	1.00 (0.99-1.01)

* p < 0.05

K: potassium; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors;
SPS: sodium polystyrene sulphonate

Table S2. The association of potassium variability quartiles over 3-year prelude with 6-month all-cause mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)
Events	1,421 (16.9)	1,322 (15.1)	1,280 (14.7)	1,339 (16.1)
Model 1	Reference	0.88 (0.81-0.95)	0.88 (0.81-0.95)	0.96 (0.88-1.04)
Model 2	Reference	1.05 (0.97-1.14)	1.15 (1.06-1.25)	1.32 (1.22-1.43)
Model 3	Reference	1.04 (0.96-1.13)	1.08 (0.99-1.17)	1.15 (1.06-1.25)
Model 4	Reference	1.05 (0.96-1.14)	1.05 (0.96-1.14)	1.09 (0.99-1.19)
Model 5	Reference	1.08 (0.99-1.17)	1.09 (1.01-1.19)	1.14 (1.03-1.25)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 3-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 3-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim,azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S3. Adjusted hazard (95% CI) of 6-month all-cause mortality following dialysis initiation with potassium variability quartiles over the 3-year prelude in selected subgroups

Subgroup		Potassium variability quartiles (mEq/L)				p-value
		<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)	
	Events	1,421 (16.9)	1,322 (15.1)	1,280 (14.7)	1,339 (16.1)	
Age < 65 years	Model 5	Reference	1.13 (0.92-1.38)	1.22 (0.99-1.49)	1.33 (1.08-1.64)	
Age ≥ 65 years	Model 5	Reference	1.04 (0.95-1.13)	1.04 (0.94-1.14)	1.03 (0.92-1.14)	0.04
Race: White	Model 5	Reference	1.09 (1.00-1.20)	1.10 (1.00-1.22)	1.11 (0.99-1.23)	
Race: African American	Model 5	Reference	1.01 (0.82-1.25)	1.09 (0.87-1.35)	1.17 (0.93-1.48)	0.21
Diabetes	Model 5	Reference	1.08 (0.99-1.19)	1.07 (0.96-1.18)	1.11 (0.99-1.24)	
No Diabetes	Model 5	Reference	1.05 (0.89-1.25)	1.17 (0.98-1.39)	1.19 (0.98-1.44)	0.24
Congestive heart failure	Model 5	Reference	1.06 (0.96-1.16)	1.08 (0.98-1.19)	1.08 (0.98-1.21)	
No Congestive heart failure	Model 5	Reference	1.16 (0.98-1.39)	1.16 (0.96-1.39)	1.31 (1.07-1.59)	0.33
RAASi	Model 5	Reference	1.09 (0.99-1.20)	1.11 (1.00-1.23)	1.15 (1.03-1.28)	
No RAASi	Model 5	Reference	1.04 (0.89-1.22)	1.06 (0.89-1.26)	1.09 (0.91-1.32)	0.94
SPS	Model 5	Reference	1.30 (0.93-1.83)	1.29 (0.93-1.77)	1.33 (0.97-1.83)	
No SPS	Model 5	Reference	1.06 (0.98-1.16)	1.08 (0.98-1.19)	1.11 (1.00-1.24)	0.79
eGFR < 15 ml/min ² /1.73 ²	Model 5	Reference	1.07 (0.79-1.43)	1.11 (0.81-1.51)	1.09 (0.79-1.54)	
eGFR ≥ 15 ml/min ² /1.73 ²	Model 5	Reference	1.06 (0.97-1.15)	1.04 (0.95-1.14)	1.08 (0.98-1.19)	0.95
K measurements ≤ 19	Model 5	Reference	1.12 (1.02-1.24)	1.13 (1.01-1.26)	1.13 (0.99-1.27)	
K measurements > 19	Model 5	Reference	0.93 (0.77-1.12)	0.97 (0.80-1.17)	1.02 (0.84-1.24)	0.23

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

Model adjusted for potassium intercept and slope over 3-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 3-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals), average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; CHF: congestive heart failure; DM: diabetes mellitus; eGFR: estimated glomerular filtration rate; K: potassium; SPS: Na-polystyrene sulphonate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S4. The association of potassium variability quartiles over the 3-year prelude with 1-month all-cause mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)
Events	274 (3.3)	269 (3.1)	233 (2.7)	237 (2.9)
Model 1	Reference	0.95 (0.78-1.15)	0.88 (0.72-1.07)	0.87 (0.71-1.06)
Model 2	Reference	1.15 (0.95-1.39)	1.16 (0.95-1.42)	1.23 (0.99-1.50)
Model 3	Reference	1.14 (0.94-1.38)	1.09 (0.89-1.34)	1.08 (0.88-1.33)
Model 4	Reference	1.13 (0.93-1.38)	1.06 (0.86-1.31)	1.04 (0.83-1.29)
Model 5	Reference	1.17 (0.96-1.42)	1.11 (0.89-1.37)	1.08 (0.86-1.36)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 3-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 3-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S5. The association of potassium variability quartiles over the 3-year prelude with all-cause mortality between 2-6 months amongst those who survived 1-month following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)
Events	1,147 (14.1)	1,053 (12.4)	1,047 (12.4)	1,102 (13.7)
Model 1	Reference	0.86 (0.69-0.94)	0.88 (0.81-0.96)	0.98 (0.89-1.07)
Model 2	Reference	1.03 (0.94-1.13)	1.15 (1.05-1.26)	1.35 (1.23-1.48)
Model 3	Reference	1.03 (0.94-1.12)	1.08 (0.98-1.18)	1.17 (1.06-1.28)
Model 4	Reference	1.03 (0.94-1.13)	1.04 (0.95-1.15)	1.10 (0.99-1.22)
Model 5	Reference	1.06 (0.97-1.16)	1.09 (0.99-1.20)	1.14 (1.03-1.27)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 3-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 3-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S6. Univariable Cox regression assessing association between exposure/confounders (over 1-year prelude) and all-cause mortality within 6-months following dialysis initiation

Exposure/confounders	Reference	Hazard ratio (95% CI)
K variability (0.30-<0.40)	<0.30	1.01 (0.91-1.12)
K variability (0.40-<0.52)	<0.30	1.22 (1.10-1.35)*
K variability (\geq 0.52)	<0.30	1.34 (1.21-1.48)*
K intercept (unit=1 mEq/L)		0.84 (0.77-0.91)*
K slope (unit=0.1 mEq/L/year)		1.00 (0.99-1.01)
Age (unit=10 years)		1.64 (1.58-1.69)*
Sex (Males)	Female	1.54 (1.14-2.09)*
Race (Black)	White	0.59 (0.55-0.65)*
Race (Other)	White	0.57 (0.45-0.73)*
Marital status (Unmarried)	Married	0.98 (0.91-1.05)
Smoking status (Current)	Never	1.06 (0.97-1.16)
Smoking status (Past)	Never	1.23 (1.13-1.35)*
Congestive heart failure		1.82 (1.68-1.97)*
Peripheral vascular disease		1.53 (1.42-1.64)*
Cerebrovascular disease		1.51 (1.40-1.62)*
Lung disease		1.69 (1.57-1.82)*
Peptic ulcer disease		1.42 (1.28-1.58)*
Paraplegia/Hemiplegia		1.26 (1.10-1.45)*
Anemia		1.18 (1.06-1.30)*
Atrial fibrillation		2.29 (2.14-2.47)*
Hypertension		0.43 (0.33-0.56)*
Ischemic heart disease		1.68 (1.55-1.83)*
Diabetes		0.84 (0.77-0.91)*
Malignancies		1.69 (1.58-1.83)*
Charlson comorbidity index (unit=1 comorbidity)		1.14 (1.13-1.15)*
Body Mass Index (unit=5 kg/m ²)		0.80 (0.78-0.83)*
Length of hospitalizations (unit=7 days)		1.06 (1.05-1.06)*
Vascular access (Catheter)	Other	2.87 (2.58-3.19)*
RAASi		0.98 (0.92-1.06)
SPS		1.06 (0.98-1.15)
Loop diuretics		0.97 (0.89-1.06)
K sparing diuretics		1.86 (1.69-2.04)*
Digoxin		2.60 (2.33-2.92)*
Beta blocker		0.97 (0.89-1.07)
Calcium channel blockers		0.46 (0.43-0.49)*
Insulin		0.83 (0.78-0.89)*
Oral hypoglycemics		1.11 (1.03-1.20)*
Calcineurin inhibitors		1.17 (0.90-1.51)
Trimethoprim		1.75 (1.45-2.12)*

Azole antifungals	1.29 (1.18-1.41)*
eGFR (unit=5 ml/min/1.73 m ²)	1.13 (1.12-1.14)*
K measurements (unit=5 measurements)	1.05 (1.04-1.06)*

* p < 0.05

K: potassium; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors;
SPS: sodium polystyrene sulphonate

Table S7. The association of K variability quartiles over the 1-year prelude with 6-month all-cause mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)
Events	777 (11.9)	776 (12.4)	910 (14.6)	997 (16.2)
Model 1	Reference	1.02 (0.92-1.14)	1.26 (1.14-1.39)	1.42 (1.28-1.57)
Model 2	Reference	1.11 (0.99-1.23)	1.38 (1.25-1.53)	1.59 (1.43-1.75)
Model 3	Reference	1.04 (0.93-1.16)	1.17 (1.06-1.30)	1.23 (1.11-1.37)
Model 4	Reference	1.02 (0.92-1.14)	1.12 (1.01-1.24)	1.14 (1.02-1.27)
Model 5	Reference	1.05 (0.94-1.17)	1.15 (1.03-1.28)	1.16 (1.04-1.29)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 1-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 1-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S8. The association of potassium variability quartiles over the 1-year prelude with 1-month all-cause mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)
Events	138 (2.1)	154 (2.5)	160 (2.6)	168 (2.7)
Model 1	Reference	1.07 (0.83-1.38)	1.13 (0.87-1.45)	1.15 (0.89-1.49)
Model 2	Reference	1.15 (0.89-1.49)	1.23 (0.95-1.58)	1.28 (0.99-1.66)
Model 3	Reference	1.07 (0.82-1.38)	1.02 (0.79-1.32)	0.98 (0.75-1.27)
Model 4	Reference	1.03 (0.79-1.34)	0.95 (0.73-1.23)	0.87 (0.66-1.15)
Model 5	Reference	1.06 (0.82-1.37)	0.97 (0.75-1.27)	0.89 (0.67-1.18)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 1-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 1-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S9. The association of potassium variability quartiles over the 1-year prelude with all-cause mortality between 2-6 months amongst those who survived within 1-month of dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)
Events	639 (10.1)	622 (10.2)	750 (12.3)	829 (13.9)
Model 1	Reference	1.01 (0.90-1.14)	1.29 (1.15-1.44)	1.49 (1.33-1.66)
Model 2	Reference	1.09 (0.98-1.24)	1.42 (1.27-1.59)	1.66 (1.48-1.85)
Model 3	Reference	1.03 (0.92-1.16)	1.21 (1.08-1.35)	1.29 (1.15-1.45)
Model 4	Reference	1.02 (0.90-1.15)	1.16 (1.03-1.29)	1.19 (1.06-1.35)
Model 5	Reference	1.04 (0.92-1.17)	1.18 (1.05-1.33)	1.21 (1.07-1.37)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 1-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 1-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim,azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S10. Adjusted hazard ratios (95% CI) of 6-month all-cause mortality following dialysis initiation with prelude potassium variability quartiles over the 1-year prelude in selected subgroups.

Subgroup	Potassium variability quartiles (mEq/L)				p-value	
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)		
Events	777 (11.9)	776 (12.4)	910 (14.6)	997 (16.2)		
Age < 65 years	Model 5	Reference	1.31 (1.01-1.70)	1.52 (1.18-1.95)	1.38 (1.06-1.79)	0.01
Age ≥ 65 years	Model 5	Reference	0.97 (0.86-1.09)	1.04 (0.92-1.17)	1.08 (0.95-1.22)	
Race: White	Model 5	Reference	1.09 (0.96-1.24)	1.18 (1.04-1.33)	1.16 (1.02-1.32)	
Race: African American	Model 5	Reference	0.95 (0.75-1.19)	1.09 (0.87-1.36)	1.12 (0.89-1.42)	0.63
Diabetes	Model 5	Reference	1.04 (0.92-1.18)	1.15 (1.02-1.29)	1.14 (1.00-1.29)	
No Diabetes	Model 5	Reference	1.04 (0.83-1.29)	1.09 (0.88-1.37)	1.19 (0.94-1.50)	0.84
Congestive heart failure	Model 5	Reference	1.05 (0.93-1.19)	1.13 (0.99-1.28)	1.14 (1.00-1.29)	
No Congestive heart failure	Model 5	Reference	0.99 (0.80-1.22)	1.15 (0.93-1.42)	1.13 (0.91-1.42)	0.82
RAASi	Model 5	Reference	1.07 (0.93-1.23)	1.13 (0.98-1.29)	1.17 (1.01-1.35)	0.81
No RAASi	Model 5	Reference	1.03 (0.87-1.22)	1.18 (1.00-1.39)	1.13 (0.94-1.35)	
SPS	Model 5	Reference	1.03 (0.69-1.54)	1.20 (0.84-1.73)	1.23 (0.86-1.75)	0.80
No SPS	Model 5	Reference	1.06 (0.94-1.18)	1.14 (1.01-1.28)	1.13 (0.99-1.28)	
eGFR < 15 ml/min ² /1.73 ²	Model 5	Reference	1.01 (0.83-1.22)	1.11 (0.91-1.35)	1.06 (0.86-1.31)	
eGFR ≥ 15 ml/min ² /1.73 ²	Model 5	Reference	1.05 (0.92-1.19)	1.13 (0.99-1.28)	1.15 (1.01-1.32)	0.95
K measurements ≤ 11	Model 5	Reference	1.03 (0.89-1.18)	1.21 (1.05-1.39)	1.05 (0.89-1.22)	
K measurements > 11	Model 5	Reference	1.04 (0.85-1.27)	1.08 (0.89-1.31)	1.17 (0.96-1.43)	0.10

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

Model adjusted for potassium intercept and slope over 1-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 1-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals), average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CHF: congestive heart failure; DM: diabetes mellitus; eGFR: estimated glomerular filtration rate; K: potassium; SPS; Na-polystyrene sulphonate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S11. Univariable Cox regression assessing association between exposure/confounders (over 3-year prelude) and cardiovascular mortality within 6-months following dialysis initiation

Exposure/confounders	Reference	Subhazard ratio (95% CI)
K variability (0.31-<0.41)	<0.31	0.90 (0.79-1.03)
K variability (0.41-<0.52)	<0.31	0.84 (0.73-0.95)*
K variability (\geq 0.52)	<0.31	0.88 (0.77-1.00)
K intercept (unit=1 mEq/L)		1.06 (0.96-1.18)
K slope (unit=0.1 mEq/L/year)		0.96 (0.93-0.99)*
Age (unit=10 years)		1.64 (1.57-1.72)*
Sex (Males)	Female	2.14 (1.31-3.51)*
Race (Black)	White	0.52 (0.46-0.59)*
Race (Other)	White	0.62 (0.45-0.86)*
Marital status (Unmarried)	Married	0.87 (0.79-0.96)*
Smoking status (Current)	Never	0.94 (0.84-1.06)
Smoking status (Past)	Never	1.19 (1.07-1.35)*
Congestive heart failure		2.67 (2.36-3.02)*
Peripheral vascular disease		1.92 (1.74-2.12)*
Cerebrovascular disease		1.76 (1.60-1.93)*
Lung disease		1.91 (1.72-2.11)*
Peptic ulcer disease		1.33 (1.16-1.52)*
Paraplegia/Hemiplegia		1.24 (1.04-1.48)*
Anemia		1.36 (1.18-1.57)*
Atrial fibrillation		2.41 (2.19-2.65)*
Hypertension		0.87 (0.54-1.41)
Ischemic heart disease		2.49 (2.20-2.83)*
Diabetes		1.10 (0.98-1.24)
Malignancies		1.32 (1.19-1.45)*
Charlson comorbidity index (unit=1 comorbidity)		1.13 (1.11-1.14)*
Body Mass Index (unit=5 kg/m ²)		0.86 (0.82-0.89)*
Length of hospitalizations (unit=7 days)		1.02 (1.02-1.03)*
Vascular access (Catheter)	Other	2.78 (2.39-3.23)*
RAASi		1.01 (0.90-1.14)
SPS		0.86 (0.77-0.96)*
Loop diuretics		1.07 (0.95-1.21)
K sparing diuretics		1.42 (1.26-1.59)*
Digoxin		2.78 (2.46-3.15)*
Beta blocker		1.08 (0.95-1.22)
Calcium channel blockers		0.48 (0.44-0.53)*
Insulin		0.85 (0.78-0.94)*
Oral hypoglycemics		0.95 (0.87-1.05)
Calcineurin inhibitors		0.87 (0.60-1.24)
Trimethoprim		1.60 (1.36-1.89)*

Azole antifungals	0.93 (0.84-1.04)
eGFR (unit=5 ml/min/1.73 m ²)	1.07 (1.06-1.08)*
K measurements (unit=5 measurements)	1.00 (0.99-1.01)

* p < 0.05

K: potassium; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors;
SPS: sodium polystyrene sulphonate

Table S12. The association of potassium variability quartiles over the 3-year prelude with 6-month cardiovascular mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)
Events	521 (6.2)	484 (5.5)	457 (5.3)	453 (5.5)
Model 1	Reference	0.90 (0.79-1.03)	0.83 (0.73-0.95)	0.87 (0.76-0.99)
Model 2	Reference	1.08 (0.95-1.23)	1.09 (0.95-1.24)	1.21 (1.05-1.38)
Model 3	Reference	1.06 (0.93-1.21)	0.99 (0.87-1.14)	1.02 (0.89-1.17)
Model 4	Reference	1.05 (0.92-1.20)	0.96 (0.84-1.11)	0.97 (0.84-1.13)
Model 5	Reference	1.08 (0.94-1.23)	0.99 (0.86-1.14)	0.99 (0.85-1.16)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 3-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 3-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium
 BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S13. Adjusted subhazard ratios (95% CI) of 6-month cardiovascular mortality following dialysis initiation with potassium variability quartiles over the 3-year prelude in selected subgroups.

Subgroup	Potassium variability quartiles (mEq/L)				p-value	
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)		
Events	521 (6.2)	484 (5.5)	457 (5.3)	453 (5.5)		
Age < 65 years	Model 5	Reference	1.24 (0.87-1.77)	1.26 (0.89-1.79)	1.34 (0.92-1.94)	
Age ≥ 65 years	Model 5	Reference	1.03 (0.89-1.19)	0.93 (0.79-1.09)	0.89 (0.75-1.06)	0.16
Race: White	Model 5	Reference	1.11 (0.96-1.29)	1.00 (0.85-1.17)	0.98 (0.82-1.16)	
Race: African American	Model 5	Reference	0.96 (0.67-1.36)	0.97 (0.68-1.39)	0.98 (0.66-1.45)	0.58
Diabetes	Model 5	Reference	1.15 (0.99-1.34)	0.99 (0.85-1.17)	1.01 (0.85-1.21)	
No Diabetes	Model 5	Reference	0.82 (0.61-1.12)	0.96 (0.70-1.29)	0.94 (0.67-1.30)	0.24
Congestive heart failure	Model 5	Reference	1.12 (0.97-1.30)	1.07 (0.92-1.25)	1.04 (0.87-1.23)	
No Congestive heart failure	Model 5	Reference	0.89 (0.65-1.21)	0.67 (0.47-0.95)	0.79 (0.54-1.17)	0.12
RAASi	Model 5	Reference	1.09 (0.93-1.28)	1.02 (0.87-1.21)	1.05 (0.88-1.25)	
No RAASi	Model 5	Reference	1.03 (0.78-1.34)	0.87 (0.64-1.18)	0.82 (0.58-1.15)	0.62
SPS	Model 5	Reference	0.86 (0.54-1.37)	0.71 (0.46-1.10)	0.73 (0.47-1.12)	
No SPS	Model 5	Reference	1.08 (0.94-1.24)	1.02 (0.87-1.19)	1.02 (0.86-1.22)	0.35
eGFR < 15 ml/min ² /1.73 ²	Model 5	Reference	0.93 (0.57-1.51)	0.87 (0.51-1.47)	0.79 (0.45-1.38)	
eGFR ≥ 15 ml/min ² /1.73 ²	Model 5	Reference	1.08 (0.94-1.24)	0.97 (0.84-1.13)	0.98 (0.83-1.15)	0.92
K measurements ≤ 19	Model 5	Reference	1.12 (0.96-1.31)	0.99 (0.82-1.18)	1.04 (0.86-1.26)	
K measurements > 19	Model 5	Reference	0.96 (0.69-1.32)	0.93 (0.68-1.29)	0.92 (0.66-1.29)	0.80

Data are presented as subhazard ratio (95% CI) unless otherwise specified.

Model adjusted for potassium intercept and slope over 3-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 3-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim,azole antifungals), average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; CHF: congestive heart failure; DM: diabetes mellitus; eGFR: estimated glomerular filtration rate; K: potassium; SPS: Na-polystyrene sulphonate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S14. The association of potassium variability quartiles over the 3-year prelude with 1-month cardiovascular mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)
Events	107 (1.3)	110 (1.3)	91 (1.1)	99 (1.2)
Model 1	Reference	1.01 (0.76-1.35)	0.86 (0.64-1.17)	0.92 (0.68-1.25)
Model 2	Reference	1.21 (0.91-1.62)	1.13 (0.84-1.53)	1.29 (0.95-1.74)
Model 3	Reference	1.19 (0.89-1.59)	1.07 (0.79-1.45)	1.13 (0.83-1.54)
Model 4	Reference	1.21 (0.89-1.62)	1.08 (0.78-1.49)	1.18 (0.84-1.66)
Model 5	Reference	1.22 (0.91-1.65)	1.09 (0.79-1.51)	1.19 (0.85-1.69)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 3-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 3-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S15. The association of potassium variability quartiles over the 3-year prelude with cardiovascular between 2-6 months amongst those who survived within 1-month of dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.31 (n=8,421)	0.31-<0.41 (n=8,757)	0.41-<0.52 (n=8,695)	≥0.52 (n=8,294)
Events	414 (5.1)	374 (4.4)	366 (4.3)	354 (4.4)
Model 1	Reference	0.89 (0.76-1.03)	0.83 (0.71-0.97)	0.87 (0.74-1.01)
Model 2	Reference	1.06 (0.92-1.23)	1.09 (0.93-1.27)	1.19 (1.03-1.39)
Model 3	Reference	1.04 (0.89-1.20)	0.99 (0.85-1.16)	1.00 (0.86-1.17)
Model 4	Reference	1.02 (0.88-1.19)	0.94 (0.79-1.09)	0.92 (0.77-1.09)
Model 5	Reference	1.04 (0.89-1.21)	0.96 (0.82-1.13)	0.94 (0.79-1.12)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 3-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 3-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim,azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 3-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S16. Univariable Cox regression assessing association between exposure/confounders (over 1-year prelude) and cardiovascular mortality within 6-months following dialysis initiation

Exposure/confounders	Reference	Subhazard ratio (95% CI)
K variability (0.30-<0.40)	<0.30	1.08 (0.91-1.29)
K variability (0.40-<0.52)	<0.30	1.28 (1.08-1.52)*
K variability (\geq 0.52)	<0.30	1.30 (1.10-1.54)*
K intercept (unit=1 mEq/L)		0.90 (0.79-1.03)
K slope (unit=0.1 mEq/L/year)		0.99 (0.97-1.00)
Age (unit=10 years)		1.67 (1.57-1.77)*
Sex (Males)	Female	1.70 (1.00-2.88)*
Race (Black)	White	0.59 (0.51-0.68)*
Race (Other)	White	0.67 (0.46-0.98)*
Marital status (Unmarried)	Married	0.89 (0.79-0.99)*
Smoking status (Current)	Never	0.94 (0.81-1.09)
Smoking status (Past)	Never	1.15 (0.99-1.33)
Congestive heart failure		2.52 (2.17-2.92)*
Peripheral vascular disease		1.89 (1.67-2.13)*
Cerebrovascular disease		1.68 (1.49-1.89)*
Lung disease		1.86 (1.64-2.11)*
Peptic ulcer disease		1.36 (1.14-1.62)*
Paraplegia/Hemiplegia		1.28 (1.02-1.61)*
Anemia		1.27 (1.07-1.52)*
Atrial fibrillation		2.56 (2.27-2.88)*
Hypertension		0.68 (0.39-1.17)
Ischemic heart disease		2.32 (2.01-2.69)*
Diabetes		1.13 (0.97-1.31)
Malignancies		1.26 (1.12-1.43)*
Charlson comorbidity index (unit=1 comorbidity)		1.13 (1.11-1.15)*
BMI (unit=5 kg/m ²)		0.83 (0.79-0.88)*
Length of hospitalizations (unit=7 days)		1.06 (1.05-1.07)*
Vascular access (Catheter)	Catheter	2.61 (2.19-3.12)*
RAASi		0.99 (0.88-1.12)
SPS		1.01 (0.88-1.15)
Loop diuretics		1.12 (0.96-1.32)
K sparing diuretics		1.87 (1.60-2.17)*
Digoxin		2.91 (2.44-3.47)*
Beta blocker		1.06 (0.91-1.24)
Calcium channel blockers		0.46 (0.41-0.52)*
Insulin		0.92 (0.82-1.04)
Oral hypoglycemics		1.11 (0.98-1.27)
Calcineurin inhibitors		0.92 (0.57-1.49)
Trimethoprim		1.83 (1.35-2.47)*

Azole antifungals	1.22 (1.05-1.42)*
eGFR (unit=5 ml/min/1.73 m ²)	1.10 (1.09-1.12)*
K measurements (unit=5 measurements)	1.04 (1.03-1.06)*

* p < 0.05

K: potassium; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors;
SPS: sodium polystyrene sulphonate

Table S17. The association of potassium variability quartiles over the 1-year prelude with 6-month cardiovascular mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)
Events	262 (4.0)	276 (4.4)	325 (5.2)	329 (5.4)
Model 1	Reference	1.09 (0.92-1.30)	1.31 (1.11-1.56)	1.36 (1.14-1.62)
Model 2	Reference	1.19 (0.99-1.42)	1.46 (1.23-1.72)	1.54 (1.29-1.83)
Model 3	Reference	1.11 (0.93-1.33)	1.24 (1.04-1.47)	1.19 (1.00-1.43)
Model 4	Reference	1.11 (0.93-1.32)	1.21 (1.01-1.44)	1.15 (0.96-1.39)
Model 5	Reference	1.13 (0.95-1.36)	1.24 (1.03-1.48)	1.18 (0.98-1.42)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 1-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 1-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S18. The association of potassium variability quartiles over the 3-year prelude with all-cause mortality between 2-6 months amongst those who survived 1-month following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)
Events	205 (3.2)	216 (3.5)	263 (4.3)	266 (4.4)
Model 1	Reference	1.11 (0.91-1.35)	1.41 (1.16-1.71)	1.44 (1.19-1.76)
Model 2	Reference	1.21 (0.99-1.48)	1.57 (1.29-1.89)	1.64 (1.35-1.99)
Model 3	Reference	1.14 (0.93-1.39)	1.35 (1.11-1.64)	1.29 (1.05-1.57)
Model 4	Reference	1.14 (0.93-1.39)	1.31 (1.07-1.59)	1.24 (1.00-1.52)
Model 5	Reference	1.16 (0.94-1.42)	1.33 (1.09-1.63)	1.25 (1.02-1.54)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 1-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 1-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S19. The association of potassium variability quartiles over the 1-year prelude with 1-month cardiovascular mortality following dialysis initiation.

	Potassium variability quartiles (mEq/L)			
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)
Events	57 (0.9)	60 (0.9)	62 (0.9)	63 (1.0)
Model 1	Reference	1.07 (0.73-1.56)	1.04 (0.70-1.54)	1.15 (0.78-1.70)
Model 2	Reference	1.16 (0.79-1.69)	1.16 (0.79-1.69)	1.31 (0.89-1.92)
Model 3	Reference	1.05 (0.72-1.53)	0.94 (0.64-1.38)	0.97 (0.65-1.43)
Model 4	Reference	1.04 (0.71-1.52)	0.91 (0.61-1.35)	0.92 (0.61-1.39)
Model 5	Reference	1.06 (0.72-1.55)	0.93 (0.62-1.39)	0.94 (0.62-1.43)

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

Models are as follows: model 1: adjusted for potassium intercept and slope over 1-year prelude; model 2: adjusted for variables in model 1 plus demographics (age, sex, race, marital status, smoking status); model 3: adjusted for variables in model 2 plus comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, and BMI over the 1-year prelude period, and vascular access type; model 4: adjusted for variables in model 3 plus medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals); model 5: adjusted for variables in model 4 plus average eGFR and number of potassium measurements over the 1-year prelude period.

BMI: body mass index; CI: confidence interval; eGFR: estimated glomerular filtration rate; RAASi: renal-angiotensin-aldosterone system inhibitors

Table S20. Adjusted subhazard ratios (95% CI) of 6-month cardiovascular mortality following dialysis initiation with prelude potassium variability quartiles over the 1-year prelude in selected subgroups

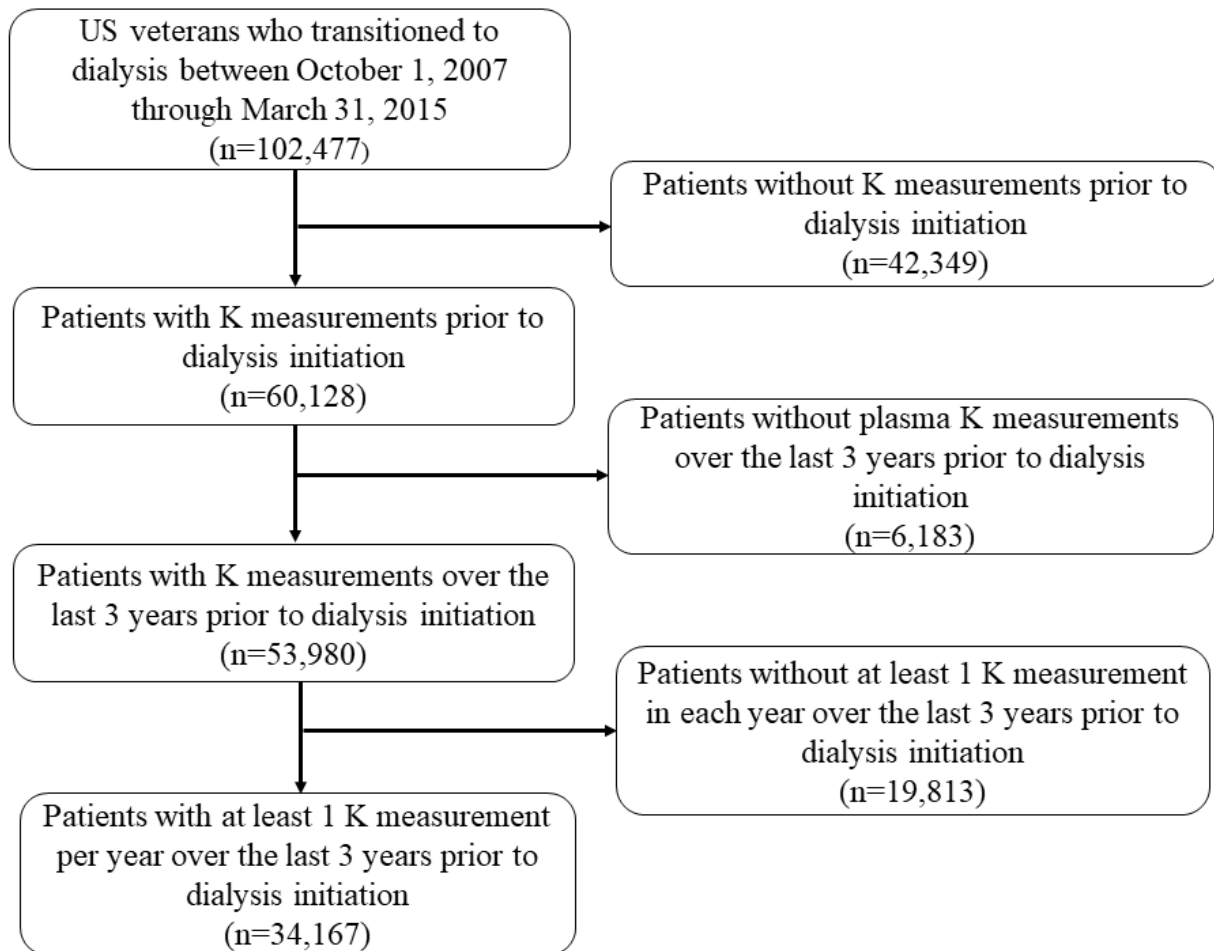
Subgroup	Potassium variability quartiles (mEq/L)				p-value	
	<0.30 (n=6,483)	0.30-<0.40 (n=6,265)	0.40-<0.52 (n=6,250)	≥0.52 (n=6,154)		
Events	262 (4.0)	276 (4.4)	325 (5.2)	329 (5.4)		
Age < 65 years	Model 5	Reference	1.69 (1.07-2.68)	1.69 (1.07-2.67)	1.72 (1.07-2.76)	0.21
Age ≥ 65 years	Model 5	Reference	1.04 (0.85-1.26)	1.16 (0.96-1.41)	1.08 (0.88-1.32)	
Race: White	Model 5	Reference	1.23 (0.99-1.51)	1.35 (1.10-1.66)	1.18 (0.95-1.47)	
Race: African American	Model 5	Reference	0.84 (0.58-1.24)	0.96 (0.66-1.41)	1.09 (0.74-1.60)	0.19
Diabetes	Model 5	Reference	1.16 (0.95-1.42)	1.26 (1.03-1.54)	1.22 (0.99-1.50)	0.93
No Diabetes	Model 5	Reference	1.04 (0.69-1.54)	1.09 (0.73-1.62)	1.01 (0.67-1.52)	
Congestive heart failure	Model 5	Reference	1.15 (0.94-1.41)	1.28 (1.05-1.57)	1.25 (1.02-1.54)	0.59
No Congestive heart failure	Model 5	Reference	1.07 (0.73-1.56)	1.05 (0.71-1.54)	0.87 (0.57-1.33)	
RAASi	Model 5	Reference	1.12 (0.88-1.42)	1.27 (1.00-1.59)	1.18 (0.93-1.49)	0.95
No RAASi	Model 5	Reference	1.14 (0.86-1.50)	1.16 (0.87-1.54)	1.16 (0.86-1.57)	
SPS	Model 5	Reference	1.32 (0.69-2.49)	1.05 (0.58-1.92)	1.25 (0.69-2.25)	0.19
No SPS	Model 5	Reference	1.11 (0.92-1.34)	1.32 (1.09-1.60)	1.13 (0.91-1.39)	
eGFR < 15 ml/min ² /1.73 ²	Model 5	Reference	1.02 (0.74-1.39)	1.18 (0.86-1.62)	0.85 (0.58-1.25)	0.16
eGFR ≥ 15 ml/min ² /1.73 ²	Model 5	Reference	1.19 (0.96-1.48)	1.25 (1.01-1.56)	1.29 (1.04-1.61)	
K measurements ≤ 11	Model 5	Reference	1.29 (1.04-1.61)	1.44 (1.15-1.81)	0.98 (0.75-1.28)	0.006
K measurements > 11	Model 5	Reference	0.91 (0.65-1.28)	1.05 (0.75-1.45)	1.19 (0.85-1.66)	

Data are presented as subhazard ratio (95% CI) unless otherwise specified.

Model adjusted for potassium intercept and slope over 1-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 1-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals), average eGFR and number of potassium measurements over the 1-year prelude period.

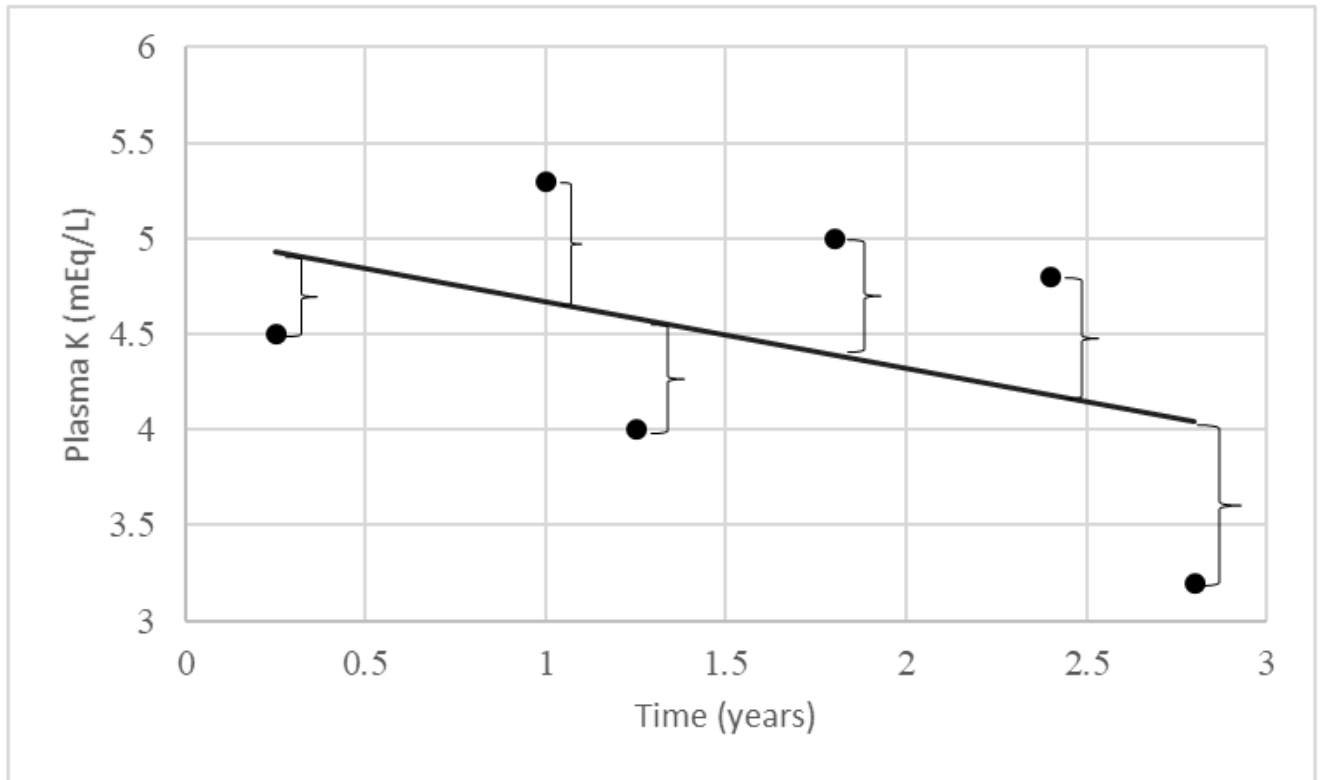
BMI: body mass index; CHF: congestive heart failure; DM: diabetes mellitus; eGFR: estimated glomerular filtration rate; K: potassium; SPS; Na-polystyrene sulphonate; RAASi: renal-angiotensin-aldosterone system inhibitors

Figure S1. Sample selection criteria



K: potassium; US: United States

Figure S2. Potassium variability calculation



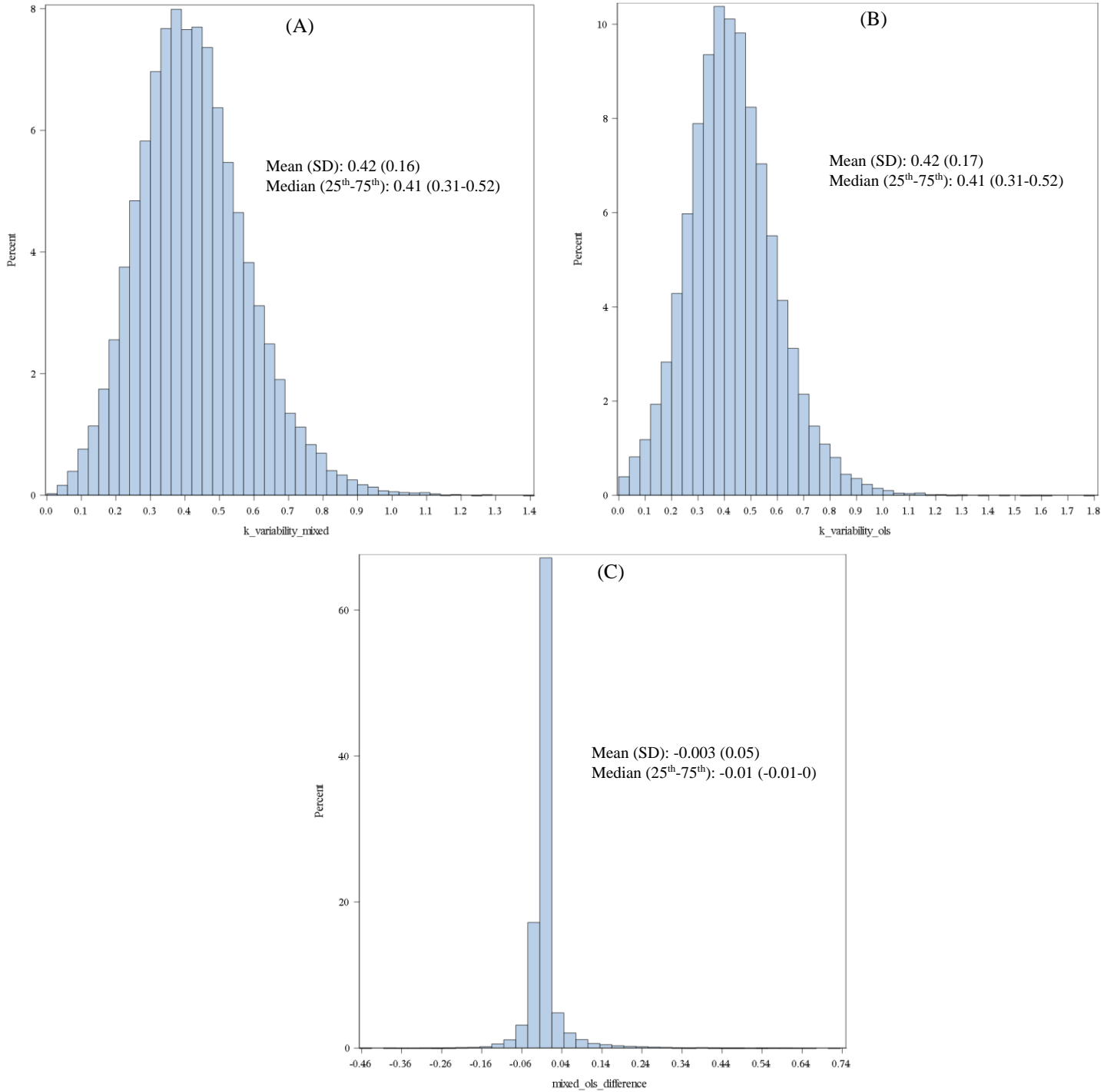
$$\text{Residual-SD} = \sqrt{\frac{\sum (K_{\text{obs}} - K_{\text{est}})^2}{n}}$$

Graph showing calculation of potassium variability

K_{obs} : Observed K measurement; K_{est} : K measurement on the regression line estimated by the linear mixed-effects model; n : number of K measurements for each patient

K: potassium; SD: standard deviation

Figure S3. A histogram of (A) potassium variability estimated by linear mixed-effects regression with random intercept and slope, (B) potassium variability estimated by ordinary least squares regression, (C) difference between potassium variability estimated by linear mixed-effects regression and ordinary least squares regression

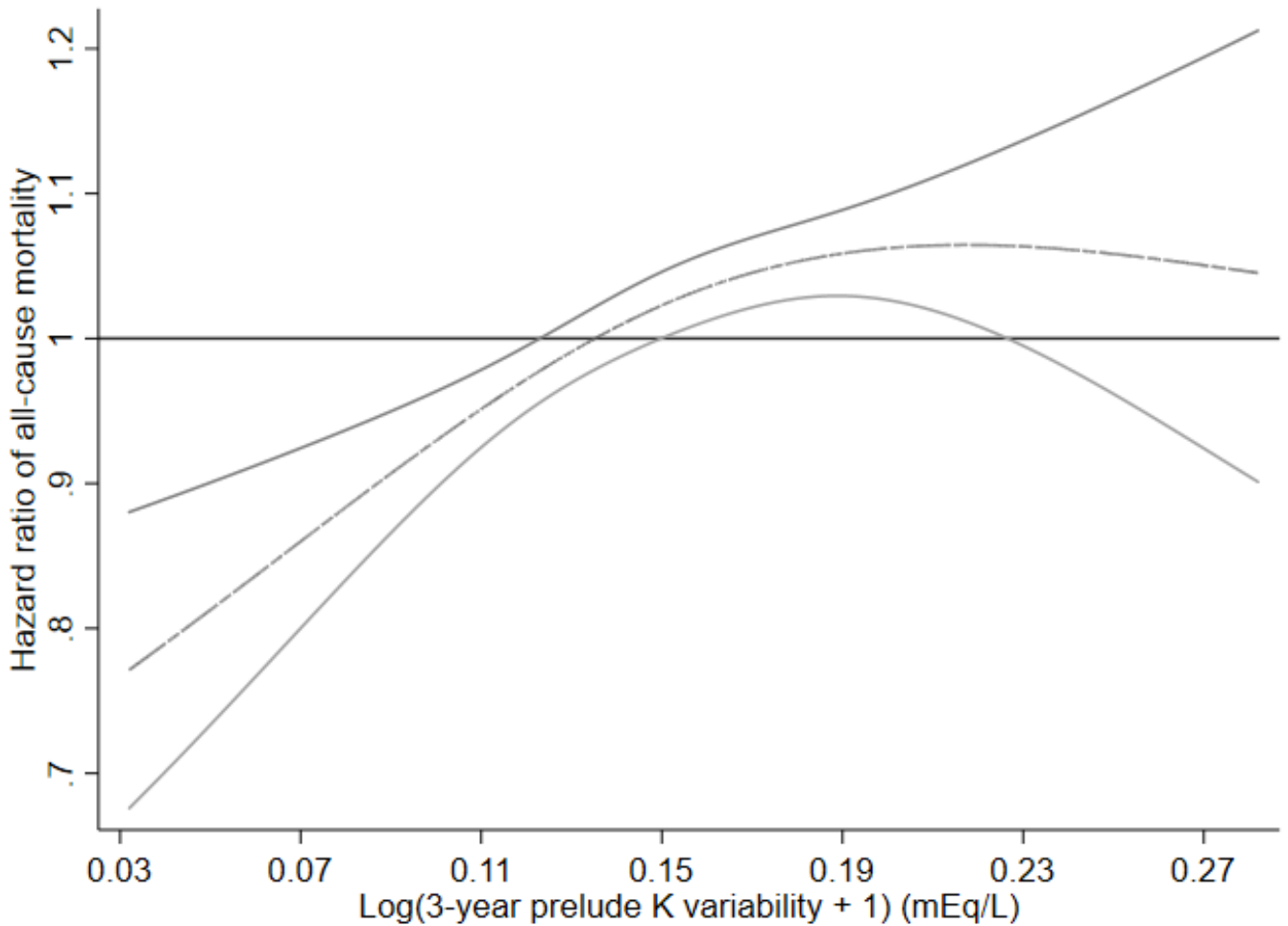


Histogram showing (A) potassium variability estimated by linear mixed-effects regression with random intercept and slope, (B) potassium variability estimated by ordinary least squares regression, (C) difference between

potassium variability estimated by linear mixed-effects regression and ordinary least squares regression i.e.
difference= potassium variability_{mixedeffects} – potassium variability_{OLS}

K: potassium; OLS: ordinary least squares regression; SD: standard deviation

Figure S4. The association of potassium variability over the 3-year prelude with 6-month all-cause mortality following dialysis initiation



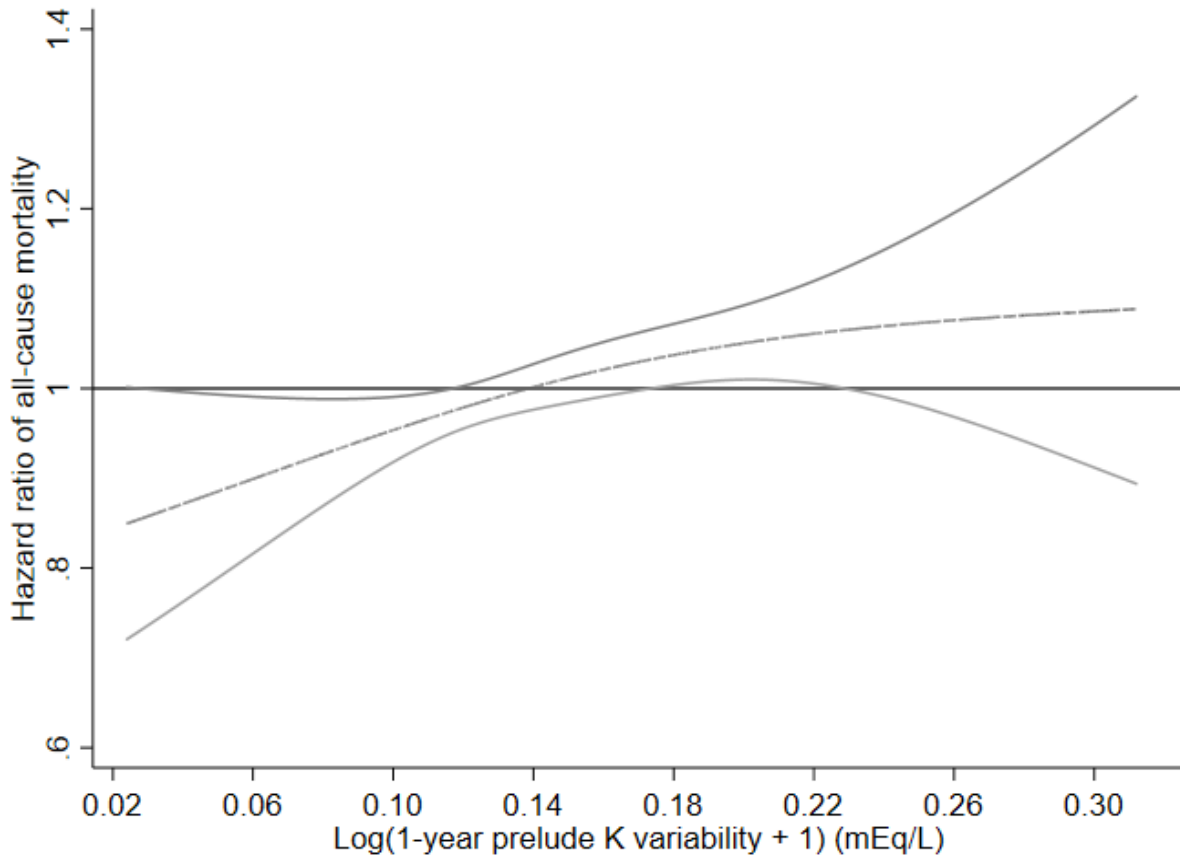
Dashed and solid lines represent hazard ratio and 95% confidence interval, respectively

The x-axis shows potassium variability levels, trimmed at 0.5% and 99.5%.

Model adjusted for potassium intercept and slope over 3-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 3-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals), average eGFR and number of potassium measurements over the 3-year prelude period.

eGFR: estimated glomerular filtration rate; BMI: body mass index; K: potassium; RAASi: renal-angiotensin-aldosterone system inhibitors

Figure S5. The association of potassium variability over the 1-year prelude with 6-month all-cause mortality following dialysis initiation.



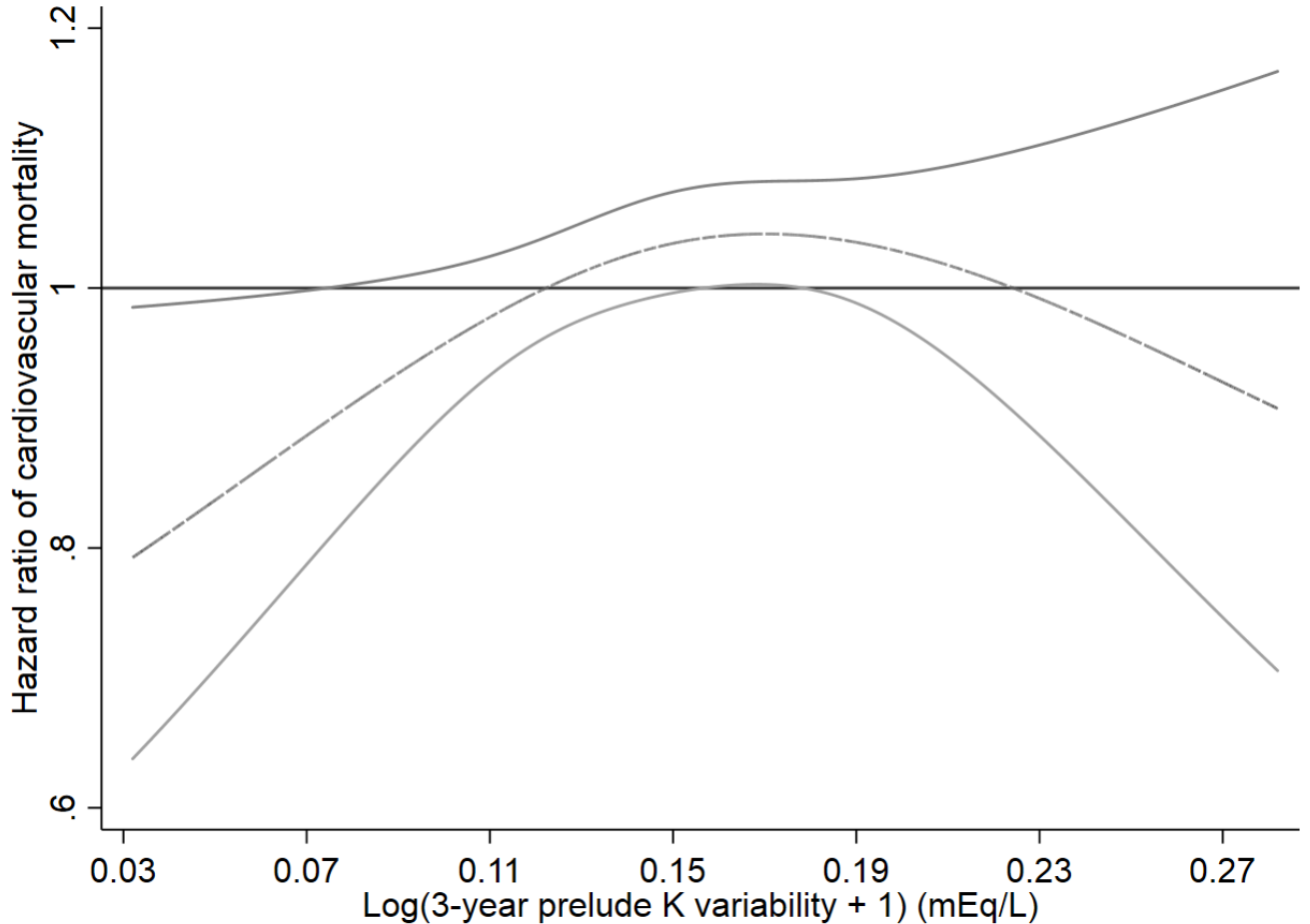
Dashed and solid lines represent hazard ratio and 95% confidence interval, respectively

The x-axis shows potassium variability levels, trimmed at 0.5% and 99.5%.

Model adjusted for potassium intercept and slope over 1-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 1-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals), average eGFR and number of potassium measurements over the 1-year prelude period.

eGFR: estimated glomerular filtration rate; BMI: body mass index; K: potassium; RAASi: renal-angiotensin-aldosterone system inhibitors

Figure S6. The association of potassium variability over the 3-year prelude with 6-month cardiovascular mortality following dialysis initiation.



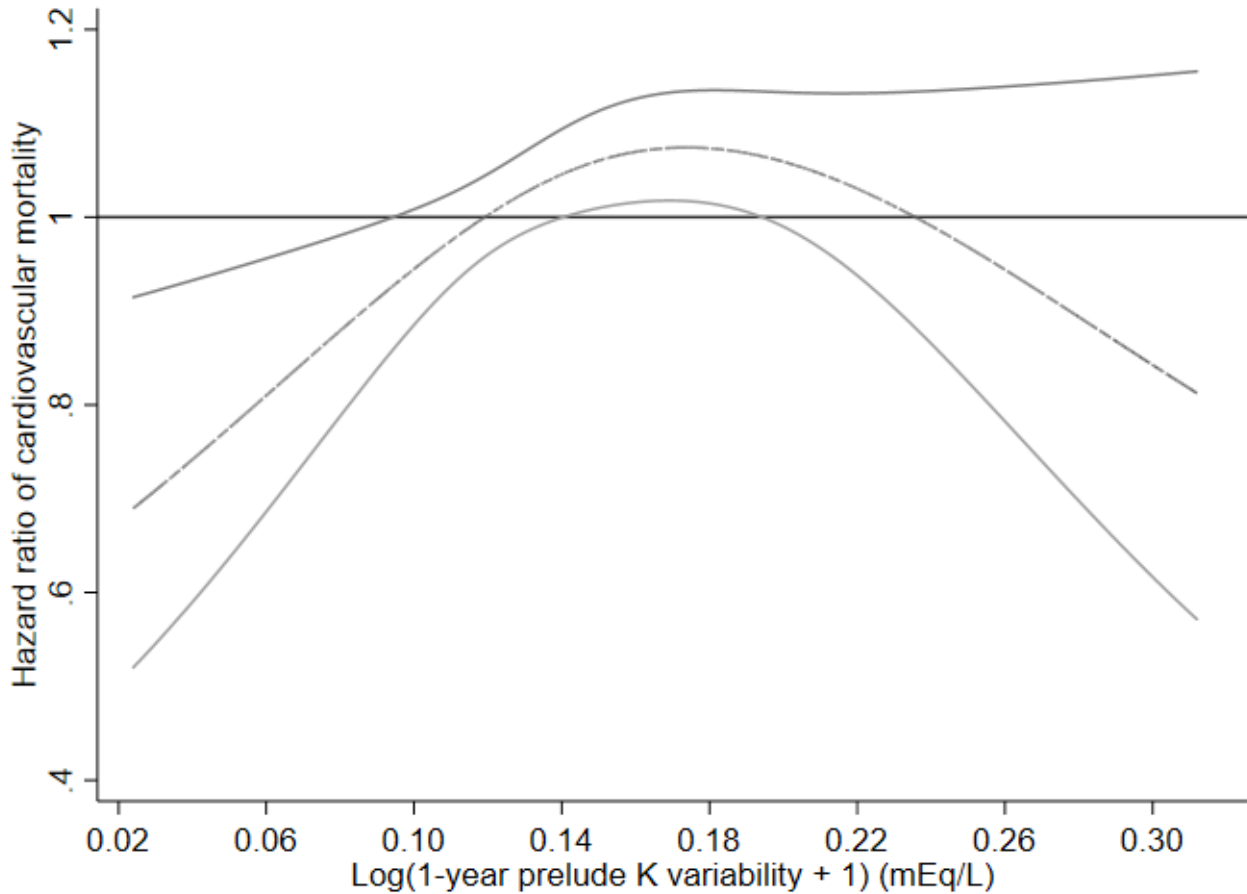
Dashed and solid lines represent hazard ratio and 95% confidence interval, respectively

The x-axis shows potassium variability levels, trimmed at 0.5% and 99.5%.

Model adjusted for potassium intercept and slope over 3-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 3-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim,azole antifungals), average eGFR and number of potassium measurements over the 3-year prelude period.

eGFR: estimated glomerular filtration rate; BMI: body mass index; K: potassium; RAASi: renal-angiotensin-aldosterone system inhibitors

Figure S7. The association of potassium variability over the 1-year prelude with 6-month cardiovascular mortality following dialysis initiation.



Dashed and solid lines represent hazard ratio and 95% confidence interval, respectively

Model adjusted for potassium intercept and slope over 1-year prelude, demographics (age, sex, race, marital status, smoking status), comorbidities (congestive heart failure, peripheral vascular disease, cerebrovascular disease, lung disease, peptic ulcer disease, paraplegia/hemiplegia, anemia, atrial fibrillation, hypertension, ischemic heart disease, diabetes, liver disease, malignancies), Charlson comorbidity index, cumulative length of hospitalizations, BMI over the 1-year prelude period, vascular access type, medications (RAASi, Na-polystyrene sulphonate, loop diuretics, potassium sparing diuretics, digoxin, beta blockers, calcium channel blockers, insulin, oral hypoglycemics, calcineurin inhibitors, trimethoprim, azole antifungals), average eGFR and number of potassium measurements over the 1-year prelude period.

eGFR: estimated glomerular filtration rate; BMI: body mass index; K: potassium; RAASi: renal-angiotensin-aldosterone system inhibitors