

Table S1. Baseline characteristics of included (patients with complete data for baseline serum potassium) and excluded patients (patients missing data for baseline serum potassium), stratified by dialysis modality

Variable	HD patients (n=131,444)		PD patients (n=12,058)	
	Included	Excluded	Included	Excluded
	(n=111,651)	(n=19,793)	(n=10,468)	(n=1590)
Age (years)	62 ± 15	61 ± 15	56 ± 16	55 ± 15
>65 years old (%)	46	43	32	28
Gender (% female)	45	43	47	49
Diabetes mellitus (%)	58	55	49	45
Race and/or ethnicity (%)				
Asian	3	3	4	3
Blacks	32	31	24	29
Hispanics	15	8	13	7
Whites	42	50	52	53
Others	7	7	6	6
Vintage (median, mo)	28 (12, 54)	29 (14, 53)	35 (15, 65)	48 (26, 85)
Primary insurance (%)				
Medicare	61	67	59	72
Medicaid	6	2	3	1
Private	11	2	13	2

Others	12	25	14	19
Marital status (%)				
Single	22	23	19	28
Married	37	51	45	52
Widow	13	11	7	7
Divorced	7	7	6	6
Co-morbid conditions (%)				
Atherosclerotic heart disease	21	23	15	15
Congestive heart failure	28	25	16	14
Other Cardiac disease	6	6	4	4
Cerebrovascular disease	8	7	5	5
Peripheral vascular disease	12	11	8	6
Chronic obstructive pulm dis	6	5	3	3
Cancer	4	5	4	4
Current Smokers	5	4	5	4
Weight (kg)	75 ± 21	80 ± 22	74 ± 19	76 ± 20
Body mass index (kg/m ²)	27 ± 7	28 ± 8	26 ± 6	27 ± 7
Serum albumin (g/dL)	3.7 ± 0.5	3.7 ± 0.5	3.6 ± 0.5	3.6 ± 0.6
Creatinine (mg/dL)	8.0 ± 3.3	8.2 ± 3.4	8.6 ± 3.7	8.9+ ± 4.0
Ferritin (ng/mL)	381 (181,712)	486 (247,765)	277 (122,585)	321 (156,632)
Total Iron Binding Capacity	209 ± 46	207 ± 47	229 ± 54	221 ± 56

(mg/dL)				
Calcium (mg/dL)	9.2 ± 0.7	9.2 ± 0.8	9.2 ± 0.8	9.2 ± 0.9
Phosphorus (mg/dL)	5.6 ± 1.5	5.6 ± 1.6	5.4 ± 1.5	5.8 ± 1.8
Parathyroid Hormone (pg/ml)	245 (143,418)	299 (177,532)	286 (159,525)	354 (207,701)
Alkaline Phosphatase (U/L)	97 (77, 131)	105 (80, 144)	97 (75, 1430)	107 (77, 151)
Hemoglobin (g/dL)	12.0 ± 1.4	11.7 ± 1.5	12.0 ± 1.5	11.6 ± 1.6
WBC (x10 ³ /μl)	7.1 (5.8, 8.7)	7.0 (5.8, 8.7)	7.2 (5.9, 8.8)	7.5 (6.0, 9.3)
% lymphocyte	20 ± 8	20 ± 8	20 ± 8	19 ± 8

Table S2. Association of time-averaged serum potassium with all-cause, cardiovascular, and infection-related mortality in Whites, Blacks, and Hispanics treated with peritoneal dialysis using intent-to-treat

	Adjusted Hazards Ratio (95% confidence interval)								
Serum K (mEq/L)	All-Cause Mortality			Cardiovascular Mortality			Infection-Related Mortality		
	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
< 3.5	1.34 (1.05, 1.70)	1.65 (1.19, 2.28)	2.29 (1.57, 3.32)	1.51 (1.05, 2.18)	1.26 (0.73, 2.19)	2.71 (1.54, 4.79)	1.58 (0.92, 2.72)	2.14 (1.20, 3.83)	1.96 (0.88, 4.34)
3.5 to < 4.0	1.18 (1.06, 1.31)	1.06 (0.88, 1.27)	1.25 (0.98, 1.60)	1.11 (0.94, 1.32)	0.94 (0.71, 1.25)	1.16 (0.79, 1.70)	1.22 (0.95, 1.57)	1.09 (0.75, 1.58)	1.35 (0.81, 2.24)
4.0 to < 4.5	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
4.5 to < 5.0	0.90 (0.81, 1.00)	0.86 (0.73, 1.02)	0.88 (0.67, 1.17)	0.97 (0.83, 1.15)	0.79 (0.61, 1.02)	0.96 (0.63, 1.47)	0.80 (0.62, 1.03)	0.96 (0.69, 1.35)	0.71 (0.39, 1.28)
5.0 to < 5.5	1.00 (0.88, 1.14)	1.00 (0.81, 1.24)	1.11 (0.81, 1.53)	1.00 (0.82, 1.23)	0.93 (0.67, 1.29)	1.41 (0.88, 2.25)	0.93 (0.69, 1.25)	0.65 (0.39, 1.09)	0.87 (0.45, 1.70)
≥ 5.5	1.51 (1.26, 1.81)	1.43 (1.00, 2.04)	2.28 (1.48, 3.51)	1.63 (1.24, 2.14)	1.07 (0.60, 1.92)	2.34 (1.19, 4.61)	1.37 (0.91, 2.07)	0.73 (0.26, 2.06)	1.75 (0.69, 4.44)

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, marital status, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking, body mass index, serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count

Table S3. Association of time-averaged serum potassium with all-cause mortality in patients treated with peritoneal dialysis using as-treated analyses where patients were censored at the time of transfer to the other dialysis modality (**n=10,454**)

Serum K (mEq/L)	Adjusted Hazards Ratio (95% Confidence Interval)
< 3.5	1.17 (0.98, 1.36)
3.5 to < 4.0	0.95 (0.87, 1.04)
4.0 to < 4.5	Reference
4.5 to < 5.0	1.24 (1.14, 1.36)
5.0 to < 5.5	1.66 (1.49, 1.85)
≥ 5.5	2.15 (1.84, 2.51)

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, marital status, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking, body mass index, serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count

Table S4. Association of serum potassium, used as a time-dependent covariate, with all-cause mortality in patients treated with peritoneal dialysis using intent-to-treat analyses (**n=10,454**)

Serum K (mEq/L)	Hazards Ratio (95% Confidence Interval)	
	Unadjusted	Adjusted
< 3.5	1.69 (1.51, 1.89)	1.34 (1.08, 1.65)
3.5 to < 4.0	1.04 (0.95, 1.15)	0.96 (0.81, 1.12)
4.0 to < 4.5	Reference	Reference
4.5 to < 5.0	0.98 (0.89, 1.07)	0.99 (0.86, 1.13)
5.0 to < 5.5	0.98 (0.88, 1.08)	1.02 (0.88, 1.18)
≥ 5.5	1.26 (1.13, 1.41)	1.29 (1.11, 1.51)

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, marital status, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking, body mass index, serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count

Table S5. Association of serum potassium and all-cause in patients treated with peritoneal dialysis and hemodialysis, using (1) time-averaged values in an as-treated analyses, and (2) time-dependent covariate in intent-to-treat analyses

Serum K (mEq/L)	Adjusted Hazards Ratio (95% Confidence Interval)			
	As-Treated Analysis, Time-Averaged Potassium		Intent-to-Treat Analysis, Potassium as Time-Dependent Covariate	
	PD	HD	PD	HD
< 3.5	1.29 (1.11, 1.50)	1.47 (1.37, 1.60)	1.25 (1.04, 1.50)	1.95 (1.83, 2.07)
3.5 to < 4.0	1.12 (1.04, 1.20)	1.12 (1.08, 1.16)	0.91 (0.80, 1.04)	1.24 (1.20, 1.29)
4.0 to < 4.5	1.23 (1.16, 1.31)	Reference	0.98 (0.88, 1.08)	Reference
4.5 to < 5.0	1.74 (1.62, 1.86)	0.96 (0.94, 0.98)	0.97 (0.89, 1.07)	0.96 (0.93, 0.99)
5.0 to < 5.5	2.80 (2.57, 3.06)	0.99 (0.96, 1.01)	1.02 (0.92, 1.13)	0.96 (0.93, 0.99)
≥ 5.5	3.74 (3.27, 4.28)	1.22 (1.18, 1.26)	1.25 (1.11, 1.40)	1.24 (1.20, 1.28)

¹PD = peritoneal dialysis ²HD = hemodialysis

³Using HD patients with serum potassium 4.0 to <4.5 meq/L as reference group.

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, marital status, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking, body mass index, serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count

Table S6. Results of the two sensitivity analyses summarizing hazards ratio for association of time-averaged serum potassium and all-cause, cardiovascular, and infection-related mortality in patients treated with peritoneal dialysis.

Time averaged	Sensitivity Analyses One ¹ (n=4,715)			Sensitivity Analyses Two ² (n=10,454)		
Serum K (mEq/L)	All-Cause Mortality	Cardiovascular Mortality	Infection-Related Mortality	All-Cause Mortality	Cardiovascular Mortality	Infection-Related Mortality
< 3.5	1.59 (1.04, 2.41)	1.56 (0.79, 3.07)	1.67 (0.66, 4.22)	1.53 (1.30, 1.79)	1.52 (1.19, 1.95)	1.85 (1.35, 2.55)
3.5 to < 4.0	1.04 (0.90, 1.20)	0.97 (0.77, 1.23)	1.03 (0.75, 1.43)	1.13 (1.04, 1.22)	1.04 (0.92, 1.19)	1.16 (0.97, 1.38)
4.0 < 4.5	Reference	Reference	Reference	Reference	Reference	Reference
4.5 to < 5.0	0.84 (0.75, 0.95)	0.90 (0.76, 1.08)	0.75 (0.58, 0.98)	0.90 (0.83, 0.98)	0.92 (0.81, 1.04)	0.84 (0.71, 1.01)
5.0 to < 5.5	0.98 (0.86, 1.12)	1.04 (0.85, 1.27)	0.82 (0.61, 1.12)	1.00 (0.91, 1.11)	1.03 (0.89, 1.19)	0.86 (0.69, 1.07)
≥ 5.5	1.39 (1.14, 1.69)	1.36 (1.01, 1.84)	1.14 (0.70, 1.84)	1.54 (1.34, 1.77)	1.53 (1.24, 1.89)	1.31 (0.95, 1.80)

Using peritoneal dialysis patients with serum potassium 4.0 < 4.5 mmol/L as reference group

¹ Including only patients with complete data for all variables.

² Body mass index and marital status excluded as covariates in model; missing data for other variables were imputed

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, marital status, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking, body mass index, serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count

Table S7. Results of first sensitivity analyses for the association of time-averaged serum potassium and all-cause, cardiovascular, and infection-related mortality in the entire cohort of peritoneal dialysis and hemodialysis patients. Analyses were limited to patients with complete data for all variables (peritoneal dialysis, n=4,715; hemodialysis, n=87,959)

Time averaged Serum K (mEq/L)	% of population		Adjusted Hazards Ratio (95% Confidence Interval) ⁴					
			All-Cause Mortality		Cardiovascular Mortality		Infection-Related Mortality	
	PD ²	HD ³	PD	HD	PD	HD	PD	HD
< 3.5	4	<1	1.50 (1.01, 2.24)	1.42 (1.26, 1.60)	1.41 (0.73, 2.71)	1.09 (0.88, 1.36)	1.88 (0.78, 4.53)	1.72 (1.33, 2.21)
3.5 to < 4.0	22	8	1.06 (0.94, 1.20)	1.07 (1.03, 1.11)	1.04 (0.85, 1.26)	1.05 (0.98, 1.12)	1.26 (0.96, 1.64)	1.08 (0.98, 1.20)
4.0 to < 4.5	31	25	1.00 (0.92, 1.08)	Reference	1.04 (0.91, 1.19)	Reference	1.18 (0.98, 1.42)	Reference
4.5 to < 5.0	25	37	0.84 (0.78, 0.91)	0.99 (0.97, 1.02)	0.96 (0.85, 1.08)	1.02 (0.98, 1.06)	0.87 (0.72, 1.05)	1.00 (0.94, 1.06)
5.0 to < 5.5	14	23	1.00 (0.91, 1.10)	1.04 (1.01, 1.07)	1.14 (0.99, 1.31)	1.11 (1.07, 1.16)	0.95 (0.75, 1.20)	1.01 (0.94, 1.08)
≥ 5.5	4	7	1.39 (1.17, 1.64)	1.32 (1.27, 1.38)	1.52 (1.18, 1.97)	1.49 (1.40, 1.59)	1.25 (0.82, 1.90)	1.35 (1.22, 1.49)

PD = peritoneal dialysis HD = hemodialysis

Using HD patients with serum potassium 4.0 to <4.5 meq/L as reference group.

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, marital status, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking, body mass index, serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count

Table S8. Results of second sensitivity analyses for the association of time-averaged serum potassium and all-cause, cardiovascular, and infection-related mortality in the entire cohort of peritoneal dialysis (n=10,454) and hemodialysis (n=111,434) patients. Models were built without including body mass index or marital status as covariates; missing data for other variables were imputed.

Time averaged Serum K (mEq/L)	% of population		Adjusted Hazards Ratio (95% Confidence Interval) ³					
			All-Cause Mortality		Cardiovascular Mortality		Infection-Related Mortality	
	PD ¹	HD ²	PD	HD	PD	HD	PD	HD
< 3.5	4	<1	1.35 (1.17, 1.57)	1.42 (1.31, 1.53)	1.45 (1.15, 1.83)	1.21 (1.05, 1.39)	1.91 (1.42, 2.56)	1.41 (1.17, 1.69)
3.5 to < 4.0	22	8	1.08 (1.01, 1.15)	1.08 (1.04, 1.11)	1.09 (0.99, 1.19)	1.08 (1.02, 1.14)	1.31 (1.14, 1.51)	1.08 (0.99, 1.17)
4.0 to < 4.5	31	25	0.98 (0.92, 1.03)	Reference	1.07 (0.98, 1.16)	Reference	1.17 (1.03, 1.32)	Reference
4.5 to < 5.0	25	37	0.89 (0.85, 0.94)	0.99 (0.97, 1.01)	0.99 (0.90, 1.09)	1.00 (0.97, 1.04)	0.99 (0.86, 1.14)	1.00 (0.95, 1.05)
5.0 to < 5.5	14	23	1.02 (0.94, 1.10)	1.04 (1.01, 1.06)	1.14 (1.0., 1.28)	1.1 (1.06, 1.14)	1.04 (0.87, 1.24)	1.01 (0.95, 1.07)
≥ 5.5	4	7	1.53 (1.35, 1.73)	1.30 (1.25, 1.34)	1.69 (1.41, 2.03)	1.43 (1.36, 1.51)	1.54 (1.16, 2.04)	1.27 (1.17, 1.39)

PD = peritoneal dialysis HD = hemodialysis

Using HD patients with serum potassium 4.0 to <4.5 meq/L as reference group.

Data adjusted for age, gender, race and/or ethnicity, diabetes, dialysis vintage, primary insurance, atherosclerotic heart disease, congestive heart failure, cerebrovascular disease, other cardiac diseases, peripheral vascular disease, chronic obstructive pulmonary disease, cancer, current smoking,

serum albumin, total iron binding capacity, ferritin, creatinine, calcium, phosphorus, parathyroid hormone, alkaline phosphatase, hemoglobin, white blood cell count, and percentage lymphocyte count. Body mass index and marital status excluded in model.