

## Supplementary Material

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## Item S1: Supplementary Methods

### Study Data

#### **CKD Progression Risk Factors**

The set of demographic risk factors were: age (21-44, 45-64, and 65-75 years), gender, and race/ethnicity (non-Hispanic white, non-Hispanic black with low-risk APOL1 genotype, non-Hispanic black with high-risk APOL1 genotype, Hispanic, and other). APOL1 risk genotype was assessed using the number of G1 and G2 risk alleles characterizing individuals with black race as either low-risk (0 or 1 copies of an APOL1 risk allele) or high-risk (2 copies of a risk allele).<sup>1</sup> Kidney function measures included eGFR (<30, 30-44, 45-59, and  $\geq 60$  mL/min/1.73m<sup>2</sup>), and urine albumin:creatinine ratio (UACR; <30, 30-299,  $\geq 300$  mg/g). Blood pressure factors included systolic blood pressure (SBP; <120, 120-139,  $\geq 140$  mmHg) and self-reported use of an angiotensin converting enzyme inhibitor or angiotensin receptor blocker (ACE/ARB). Clinical risk factors included self-reported history of cardiovascular disease (CVD; myocardial infarction or revascularization, heart failure, stroke, or peripheral arterial disease) and serum uric acid level (<6.5, 6.5-8.1,  $\geq 8.2$  mg/dL). The socioeconomic factor was level of education (did not complete high school, high school diploma/some college, college graduate/graduate school) and behavioral factor was current smoking. Body composition measures included body mass index (<28, 28-34,  $\geq 35$  kg/m<sup>2</sup>), and fat-free mass in kilograms estimated using bioelectrical impedance analysis.<sup>2,3</sup> Ankle-brachial index (<0.9, 0.9-1.0, 1.1-1.3,  $\geq 1.4$ ) was included as a peripheral vascular measure. Gender-specific categories of hemoglobin were used as a measure of anemia (<11, 11-12,  $\geq 13$  g/dL for women and <12, 12-13,  $\geq 14$  for men). High-sensitivity C-reactive protein (hsCRP) represented an inflammatory marker, and serum fractalkine (CX3CL1) and plasma CXCL12 were included as available inflammatory chemokines. Mineral metabolism markers included fibroblast growth factor-23 (FGF-23), serum phosphate, and intact parathyroid hormone (iPTH), and carbohydrate metabolism markers were hemoglobin A1c (HbA1c) and insulin resistance estimated by the Homeostatic Model Assessment (HOMA-IR) calculated using fasting plasma glucose and insulin.<sup>4</sup> High-sensitivity Troponin T (hsTnT) and N-terminal pro-B-type natriuretic peptide (NTproBNP) were the considered cardiac markers. Serum bicarbonate served as the acidosis measure, urinary electrolytes included urine sodium and potassium, urine neutrophil gelatinase-associated lipocalin (NGAL) was used as a marker of kidney injury, and serum aldosterone was included as a marker related to the renin-angiotensin-aldosterone system. Continuous variables were assessed using quartiles unless otherwise noted.

#### **Data Collection**

SBP was measured in triplicate following a standardized protocol with the participant seated using a Tycos Classic hand cuff and aneroid sphygmomanometer. The baseline SBP value was the mean of all measurements. Self-reported current use of cigarettes along with at least 100 cigarettes smoked ever defined current smoking. Anthropometric measures were assessed using standard protocols.<sup>5</sup> Participants were queried about any medication usage in the prior 30 days. Serum creatinine was measured at the CRIC Central Laboratory using an enzymatic method ([www.orthoclinical.com](http://www.orthoclinical.com)) for samples collected through October 2008 and by the Jaffe method ([www.beckmancoulter.com](http://www.beckmancoulter.com)), thereafter, standardized to isotope dilution mass spectrometry-traceable values.<sup>6,7</sup> Serum cystatin C was measured by particle-enhanced immunonephelometric assay on the Siemens BN<sup>TM</sup> II System ([www.siemens.com](http://www.siemens.com)). Estimated GFR was calculated from serum creatinine and cystatin C using a CRIC Study equation.<sup>8</sup> Hemoglobin was obtained as part of a complete blood count at each of the CRIC clinical sites using local clinical laboratories. Hemoglobin A1c was analyzed in whole blood; CXCL12, glucose, insulin, hsCRP, iPTH, FGF-23, hsTnT, NTproBNP were measured in plasma; and uric acid, fractalkine, phosphate, bicarbonate, and aldosterone were evaluated using a serum sample. Urine albumin, creatinine, sodium, potassium, and NGAL were measured in 24-hour urine samples.

#### **Outcomes and Censoring Events**

KRT was defined as the initiation of maintenance dialysis or kidney transplantation and was ascertained through self-report and supplemented by data from the United States Renal Data System (USRDS). For participants who developed KRT, the eGFR from the Centers for Medicare and Medicaid Services Medical Evidence Form 2728 at onset of KRT was assigned as the last GFR value when available; for the remainder of participants reaching KRT, the mean eGFR reported by the USRDS for the age range in

CRIC (i.e., 10.8 mL/min/1.73m<sup>2</sup>) was assigned. Time to eGFR halving was imputed assuming a linear decline in kidney function between in-person annual visit measures.<sup>9</sup>

Deaths were determined from reports of next of kin, death certificates, obituaries, reviews of hospital records, the Social Security Death Master File and the National Death Index.

**Table S1a. Intermediate models of chronic kidney disease progression adjusted only for demographic, kidney function and blood pressure risk factors among CRIC participants without diabetes**

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
<b>Demographic Factors</b>					
Age, years	<44	-0.1 (0.1)	.4	1.3 (1.0, 1.7)	.1
	45-64	Ref		Ref	
	65-75	-0.1 (0.1)		1.0 (0.8, 1.3)	
Gender	Male	Ref	.003	Ref	.002
	Female	0.3 (0.1)		0.7 (0.6, 0.9)	
Race/ ethnicity	NH-White	Ref	<.001	Ref	<.001
	NH-Black, APOL1 low-risk	-0.2 (0.1)		1.8 (1.4, 2.3)	
	NH-Black, APOL1 high-risk	-0.6 (0.2)		2.3 (1.7, 3.1)	
	Hispanic	0.1 (0.2)		1.2 (0.8, 1.8)	
	Other	-0.4 (0.2)		2.3 (1.4, 3.7)	
<b>Kidney Function Measures</b>					
Baseline eGFR, mL/min/ 1.73m <sup>2</sup>	<30	0.2 (0.2)	.04	2.1 (1.7, 2.7)	<.001
	30-44.9	Ref		Ref	
	45-59.9	0.0 (0.1)		0.5 (0.4, 0.7)	
	≥60	0.3 (0.1)		0.2 (0.1, 0.3)	
UACR, mg/g	<30	Ref	<.001	Ref	<.001
	30-299	-1.0 (0.1)		3.5 (2.6, 4.8)	
	≥300	-2.3 (0.1)		10.6 (7.8, 14.4)	
<b>Blood Pressure Factors</b>					
Systolic BP, mmHg	<120	Ref	<.001	Ref	.003
	120-139	-0.2 (0.1)		1.3 (1.1, 1.7)	
	≥140	-0.5 (0.1)		1.5 (1.2, 2.0)	
ACE/ARB	No	Ref	.04	Ref	.8
	Yes	0.2 (0.1)		1.0 (0.8, 1.3)	
<b>Clinical Factors</b>					
History of CVD	No	Ref	.6	Ref	.8
	Yes	-0.1 (0.1)		1.0 (0.8, 1.2)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
Uric acid, mg/dL	<6.5	Ref	.9	Ref	.9
	6.5-8.9	0.0 (0.1)		1.1 (0.8, 1.4)	
	≥8.2	0.0 (0.1)		1.1 (0.8, 1.4)	
<b>Socioeconomic Status Factor</b>					
Education	Less than High School	0.0 (0.1)	.5	1.1 (0.8, 1.4)	.6
	High School/Some College	Ref		Ref	
	Graduated College	-0.1 (0.1)		1.1 (0.9, 1.4)	
<b>Behavioral Factor</b>					
Current Smoker	No	Ref	.6	Ref	.3
	Yes	-0.1 (0.1)		1.2 (0.9, 1.5)	
<b>Body Composition Measures</b>					
BMI, kg/m <sup>2</sup>	<28	-0.1 (0.1)	.3	1.0 (0.8, 1.3)	.3
	28-34.9	Ref		Ref	
	≥35	0.0 (0.1)		0.8 (0.6, 1.1)	
Fat-free mass, kg	Q1: [25.8, 49.1)	Ref	.1	Ref	.02
	Q2: [49.1, 59.1)	0.3 (0.1)		0.7 (0.5, 0.9)	
	Q3: [59.1, 69.9)	0.3 (0.1)		0.6 (0.5, 0.9)	
	Q4: [69.9, 167.1)	0.2 (0.2)		0.8 (0.6, 1.1)	
<b>Peripheral Vascular Measure</b>					
Ankle-brachial index	<0.9	-0.3 (0.2)	.2	1.2 (0.8, 1.6)	.2
	0.9-1.09	Ref		Ref	
	1.1-1.39	0.0 (0.1)		0.9 (0.7, 1.1)	
	≥1.4	-0.4 (0.4)		1.6 (0.7, 3.7)	
<b>Measure of Anemia</b>					
Hemoglobin, mg/dL	M: <12, F: <11	0.1 (0.1)	.3	1.3 (1.0, 1.7)	.003
	M: 12-13.9, F: 11-12.9	Ref		Ref	
	M: ≥14, F: ≥13	0.1 (0.1)		0.8 (0.6, 1.0)	
<b>Inflammatory Marker and Chemokines</b>					
hsCRP, mg/L	Q1: [0.1, 1.0)	Ref	.9	Ref	.6
	Q2: [1.0, 2.5)	0.0 (0.1)		1.0 (0.8, 1.4)	
	Q3: [2.5, 6.3)	0.1 (0.1)		0.9 (0.7, 1.2)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
	Q4: [6.3, 187)	0.0 (0.1)		1.0 (0.8, 1.4)	
Serum fractalkine (CX3CL1), pg/mL	Q1: [0.1, 0.6)	Ref	.9	Ref	.3
	Q2: [0.6, 0.8)	0.0 (0.1)		1.3 (1.0, 1.8)	
	Q3: [0.8, 1.1)	0.1 (0.1)		1.2 (0.8, 1.6)	
	Q4: [1.1, 3.6]	0.0 (0.1)		1.3 (1.0, 1.8)	
Plasma CXCL12, pg/mL	Q1: [832.1, 2066.4)	Ref	.3	Ref	.2
	Q2: [2066.4, 2410.5)	-0.2 (0.1)		1.2 (0.9, 1.7)	
	Q3: [2410.5, 2797.8)	-0.1 (0.1)		1.3 (1.0, 1.7)	
	Q4: [2797.8, 6173.3]	-0.2 (0.1)		1.4 (1.0, 1.8)	
<b>Mineral Metabolism Markers</b>					
FGF23, RU/mL	Q1: [1.4, 94.1)	Ref	.1	Ref	.1
	Q2: [94.1, 139.1)	0.0 (0.1)		1.4 (1.0, 1.9)	
	Q3: [139.1, 225.5)	0.2 (0.1)		1.4 (1.0, 1.9)	
	Q4: [225.5, 14 318.9]	0.3 (0.1)		1.4 (1.0, 1.9)	
Serum phosphate, mg/dL	Q1: [1.7, 3.3)	-0.3 (0.1)	.09	1.4 (1.0, 1.8)	.02
	Q2: [3.3, 3.7)	Ref		Ref	
	Q3: [3.7, 4.1)	0.0 (0.1)		1.5 (1.1, 2.0)	
	Q4: [4.1, 9.3]	-0.1 (0.1)		1.4 (1.0, 1.9)	
Intact PTH pg/mL	Q1: [1.9, 34.1)	0.2 (0.1)	.3	1.0 (0.7, 1.4)	.6
	Q2: [34.1, 52.4)	Ref		Ref	
	Q3: [52.4, 84.7)	0.1 (0.1)		1.0 (0.8, 1.4)	
	Q4: [84.5, 1483]	0.0 (0.1)		1.2 (0.9, 1.6)	
<b>Carbohydrate Metabolism Markers</b>					
HbA1c, %	Q1: [3.5, 5.6)	Ref	.8	Ref	.6
	Q2: [5.6, 6.2)	-0.1 (0.1)		0.9 (0.7, 1.1)	
	Q3: [6.2, 7.3)	0.0 (0.1)		0.8 (0.6, 1.1)	
	Q4: [7.3, 15.2]	-0.3 (0.5)		0.9 (0.4, 2.3)	
HOMA-IR	Q1: [0, 2.5)	Ref	.9	Ref	.3
	Q2: [2.5, 4.1)	0.0 (0.1)		0.9 (0.7, 1.2)	
	Q3: [4.1, 7.2)	0.1 (0.1)		1.0 (0.8, 1.3)	
	Q4: [7.2, 224.8)	0.1 (0.2)		0.7 (0.5, 1.0)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
<b>Cardiac Markers</b>					
hsTnT, pg/mL	Q1: [1.5, 5.5)	Ref	.7	Ref	.2
	Q2: [5.5, 11.4)	0.1 (0.1)		1.2 (0.9, 1.5)	
	Q3: (11.4, 22.2)	0.0 (0.1)		0.9 (0.6, 1.2)	
	Q4: (22.2, 738.7)	0.2 (0.2)		1.0 (0.7, 1.4)	
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	.02	Ref	.004
	Q2: [60.2, 139.4)	-0.2 (0.1)		1.5 (1.1, 2.1)	
	Q3: [139.4, 366.6)	-0.4 (0.1)		1.7 (1.3, 2.4)	
	Q4: [366.6, 33 742]	-0.2 (0.1)		1.7 (1.2, 2.4)	
<b>Acidosis Marker</b>					
Serum bicarbonate, mmol/L	≤22	-0.1 (0.1)	.8	1.5 (1.2, 2.0)	.005
	(22, 24]	Ref		Ref	
	(24, 26]	0.0 (0.1)		1.0 (0.7, 1.4)	
	>26	0.0 (0.1)		1.1 (0.8, 1.5)	
<b>Urinary Electrolytes</b>					
Urine sodium, mEq/24h	Q1: [4.3, 108.6)	Ref	.2	Ref	.5
	Q2: [108.6, 151.3)	0.2 (0.1)		0.8 (0.6, 1.1)	
	Q3: [151.3, 203.1)	0.1 (0.1)		0.9 (0.7, 1.2)	
	Q4: [203.1, 699.8]	0.2 (0.1)		0.9 (0.7, 1.2)	
Urine potassium, mmol/24h	Q1: [3.0, 37.5)	Ref	.05	Ref	.5
	Q2: [37.5, 51.8)	0.0 (0.1)		1.1 (0.9, 1.5)	
	Q3: [51.8, 69.4)	-0.1 (0.1)		1.3 (0.9, 1.7)	
	Q4: [69.4, 417.7]	0.2 (0.1)		1.1 (0.8, 1.5)	
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	.06	Ref	.005
	Q2: [6.3, 14.2)	-0.3 (0.1)		1.7 (1.2, 2.4)	
	Q3: [14.2, 32.9)	-0.2 (0.1)		1.3 (0.9, 1.9)	
	Q4: [32.9, 2743.8]	-0.3 (0.1)		1.7 (1.2, 2.5)	
<b>RAAS Marker</b>					
	Q1: [0.8, 71.2)	Ref	.03	Ref	.1
	Q2: [71.2, 101.4)	-0.3 (0.1)		1.4 (1.0, 1.9)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
Serum aldosterone, pg/mL	Q3: [101.4, 152.8)	-0.2 (0.1)		1.4 (1.1, 1.9)	
	Q4: [152.8, 15 630.9]	0.0 (0.1)		1.2 (0.9, 1.6)	

Abbreviations: ACE: angiotensin converting enzyme; ARB: angiotensin receptor blocker; BP: blood pressure; CI: confidence interval; CKD: chronic kidney disease; CVD: cardiovascular disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; FGF23: fibroblast growth factor-23; HR: hazard ratio; hsCRP: high-sensitivity C-reactive protein; hsTnT: high-sensitivity troponin T; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; PTH: parathyroid hormone; RAAS: renin-angiotensin-aldosterone system; Ref: reference; SE: standard error; UACR: urine albumin:creatinine ratio

SI conversion: To convert Uric acid to  $\mu\text{mol/L}$ , multiply by 59.485. To convert Hemoglobin to g/L, multiply by 0.01. To convert hsCRP to nmol/L, multiply by 9.524. To convert serum phosphate to mmol/L, multiply by 0.323. For serum bicarbonate, 1 mEq/L is equivalent to 1 mmol/L. For urine potassium, 1 mEq/24h is equivalent to 1 mmol/d. To convert serum aldosterone to pmol/L, multiply by 2.774.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.



**Table S1b. Intermediate models of chronic kidney disease progression adjusted only for demographic, kidney function and blood pressure risk factors among CRIC participants with diabetes**

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
<b>Demographic Factors</b>					
Age, years	<44	-0.5 (0.2)	.1	1.3 (1.0, 1.7)	.001
	45-64	Ref		Ref	
	65-75	0.0 (0.1)		0.8 (0.6, 0.9)	
Gender	Male	Ref	.6	Ref	.01
	Female	-0.1 (0.1)		0.8 (0.7, 1.0)	
Race/ ethnicity	NH-White	Ref	<.001	Ref	<.001
	NH-Black, APOL1 low-risk	-0.7 (0.1)		1.5 (1.2, 1.8)	
	NH-Black, APOL1 high-risk	-1.1 (0.3)		1.7 (1.3, 2.3)	
	Hispanic	-0.5 (0.2)		1.4 (1.1, 1.9)	
	Other	-0.3 (0.3)		1.2 (0.8, 1.7)	
<b>Kidney Function Measures</b>					
Baseline eGFR, mL/min/ 1.73m <sup>2</sup>	<30	0.4 (0.2)	<.001	1.9 (1.6, 2.3)	<.001
	30-44.9	Ref		Ref	
	45-59.9	-0.4 (0.1)		0.6 (0.5, 0.8)	
	≥60	-0.4 (0.2)		0.4 (0.3, 0.6)	
UACR, mg/g	<30	Ref	<.001	Ref	<.001
	30-299	-1.1 (0.1)		2.8 (2.1, 3.7)	
	≥300	-2.7 (0.2)		7.1 (5.5, 9.3)	
<b>Blood Pressure Factors</b>					
Systolic BP, mmHg	<120	Ref	<.001	Ref	<.001
	120-139	-0.2 (0.1)		1.2 (1.0, 1.5)	
	≥140	-0.8 (0.2)		1.9 (1.5, 2.3)	
ACE/ARB	No	Ref	.9	Ref	.2
	Yes	0.0 (0.2)		0.9 (0.7, 1.1)	
<b>Clinical Factors</b>					
History of CVD	No	Ref	.3	Ref	.02
	Yes	-0.1 (0.1)		1.2 (1.0, 1.4)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
Uric acid, mg/dL	<6.5	Ref	.3	Ref	.08
	6.5-8.9	-0.2 (0.1)		1.2 (1.0, 1.5)	
	≥8.2	-0.2 (0.2)		1.3 (1.0, 1.6)	
<b>Socioeconomic Status Factor</b>					
Education	Less than High School	-0.2 (0.2)	.2	0.9 (0.8, 1.1)	.6
	High School/Some College	Ref		Ref	
	Graduated College	0.1 (0.1)		0.9 (0.8, 1.1)	
<b>Behavioral Factor</b>					
Current Smoker	No	Ref	.07	Ref	.06
	Yes	-0.3 (0.2)		1.2 (1.0, 1.5)	
<b>Body Composition Measures</b>					
BMI, kg/m <sup>2</sup>	<28	-0.2 (0.2)	.5	1.1 (0.9, 1.4)	.4
	28-34.9	Ref		Ref	
	≥35	0.0 (0.1)		1.0 (0.9, 1.2)	
Fat-free mass, kg	Q1: [25.8, 49.1)	Ref	.9	Ref	.6
	Q2: [49.1, 59.1)	0.0 (0.2)		0.9 (0.7, 1.1)	
	Q3: [59.1, 69.9)	-0.1 (0.2)		0.9 (0.7, 1.2)	
	Q4: [69.9, 167.1)	0.0 (0.2)		1.0 (0.7, 1.3)	
<b>Peripheral Vascular Measure</b>					
Ankle-brachial index	<0.9	0.0 (0.2)	.7	1.1 (0.9, 1.4)	.03
	0.9-1.09	Ref		Ref	
	1.1-1.39	0.1 (0.1)		1.1 (0.9, 1.3)	
	≥1.4	-0.2 (0.3)		1.7 (1.2, 2.5)	
<b>Measure of Anemia</b>					
Hemoglobin, mg/dL	M: <12, F: <11	-0.2 (0.1)	.2	1.1 (0.9, 1.3)	.1
	M: 12-13.9, F: 11-12.9	Ref		Ref	
	M: ≥14, F: ≥13	0.2 (0.2)		0.9 (0.7, 1.1)	
<b>Inflammatory Marker and Chemokines</b>					
hsCRP, mg/L	Q1: [0.1, 1.0)	Ref	.3	Ref	.4
	Q2: [1.0, 2.5)	0.1 (0.2)		0.9 (0.7, 1.1)	
	Q3: [2.5, 6.3)	0.3 (0.2)		0.8 (0.7, 1.0)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
	Q4: [6.3, 187)	0.2 (0.2)		0.9 (0.7, 1.1)	
Serum fractalkine (CX3CL1), pg/mL	Q1: [0.1, 0.6)	Ref	.01	Ref	.05
	Q2: [0.6, 0.8)	0.1 (0.2)		1.0 (0.7, 1.3)	
	Q3: [0.8, 1.1)	-0.4 (0.2)		1.2 (0.9, 1.6)	
	Q4: [1.1, 3.6]	-0.4 (0.2)		1.3 (1.0, 1.7)	
Plasma CXCL12, pg/mL	Q1: [832.1, 2066.4)	Ref	.3	Ref	<.001
	Q2: [2066.4, 2410.5)	-0.1 (0.2)		1.2 (0.9, 1.6)	
	Q3: [2410.5, 2797.8)	-0.3 (0.2)		1.5 (1.2, 2.0)	
	Q4: [2797.8, 6173.3]	-0.3 (0.2)		1.7 (1.4, 2.2)	
<b>Mineral Metabolism Markers</b>					
FGF23, RU/mL	Q1: [1.4, 94.1)	Ref	.6	Ref	<.001
	Q2: [94.1, 139.1)	-0.2 (0.2)		1.2 (0.9, 1.6)	
	Q3: [139.1, 225.5)	-0.1 (0.2)		1.6 (1.2, 2.1)	
	Q4: [225.5, 14 318.9]	-0.3 (0.2)		1.8 (1.3, 2.5)	
Serum phosphate, mg/dL	Q1: [1.7, 3.3)	0.0 (0.2)	.9	0.9 (0.7, 1.1)	.2
	Q2: [3.3, 3.7)	Ref		Ref	
	Q3: [3.7, 4.1)	0.0 (0.2)		1.0 (0.8, 1.2)	
	Q4: [4.1, 9.3]	0.1 (0.2)		1.1 (0.9, 1.4)	
Intact PTH pg/mL	Q1: [1.9, 34.1)	0.2 (0.2)	.2	1.1 (0.9, 1.5)	.06
	Q2: [34.1, 52.4)	Ref		Ref	
	Q3: [52.4, 84.7)	-0.1 (0.2)		1.1 (0.9, 1.4)	
	Q4: [84.5, 1483]	-.1 (0.2)		1.4 (1.1, 1.7)	
<b>Carbohydrate Metabolism Markers</b>					
HbA1c, %	Q1: [3.5, 5.6)	Ref	.3	Ref	.1
	Q2: [5.6, 6.2)	0.2 (0.3)		1.3 (0.9, 2.1)	
	Q3: [6.2, 7.3)	0.2 (0.3)		1.0 (0.6, 1.4)	
	Q4: [7.3, 15.2]	0.0 (0.3)		1.0 (0.7, 1.6)	
HOMA-IR	Q1: [0, 2.5)	Ref	.8	Ref	.3
	Q2: [2.5, 4.1)	0.1 (0.2)		0.8 (0.6, 1.0)	
	Q3: [4.1, 7.2)	0.1 (0.2)		0.9 (0.6, 1.1)	
	Q4: [7.2, 224.8)	0.2 (0.2)		0.8 (0.6, 1.0)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI)	P value
hsTnT, pg/mL	Q1: [1.5, 5.5)	Ref	.2	Ref	<.001
	Q2: [5.5, 11.4)	-0.2 (0.2)		1.1 (0.8, 1.6)	
	Q3: (11.4, 22.2)	-0.2 (0.2)		1.3 (0.9, 1.8)	
	Q4: (22.2, 738.7)	-0.4 (0.2)		1.8 (1.3, 2.6)	
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	<.001	Ref	<.001
	Q2: [60.2, 139.4)	-0.5 (0.2)		1.5 (1.1, 2.0)	
	Q3: [139.4, 366.6)	-0.5 (0.2)		1.6 (1.2, 2.1)	
	Q4: [366.6, 33 742]	-0.8 (0.2)		2.1 (1.6, 2.8)	
Serum bicarbonate, mmol/L	≤22	0.1 (0.2)	.5	0.9 (0.7, 1.1)	.7
	(22, 24]	Ref		Ref	
	(24, 26]	0.1 (0.2)		0.9 (0.7, 1.1)	
	>26	0.3 (0.2)		0.9 (0.7, 1.1)	
Urine sodium, mEq/24h	Q1: [4.3, 108.6)	Ref	.2	Ref	.7
	Q2: [108.6, 151.3)	0.0 (0.2)		1.0 (0.8, 1.2)	
	Q3: [151.3, 203.1)	0.3 (0.2)		0.9 (0.8, 1.2)	
	Q4: [203.1, 699.8]	0.2 (0.2)		0.9 (0.7, 1.1)	
Urine potassium, mmol/24h	Q1: [3.0, 37.5)	Ref	.2	Ref	.1
	Q2: [37.5, 51.8)	0.0 (0.2)		0.8 (0.7, 1.0)	
	Q3: [51.8, 69.4)	0.2 (0.2)		0.8 (0.6, 1.0)	
	Q4: [69.4, 417.7]	0.3 (0.2)		0.8 (0.6, 1.0)	
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	<.001	Ref	<.001
	Q2: [6.3, 14.2)	-0.4 (0.2)		1.2 (0.9, 1.6)	
	Q3: [14.2, 32.9)	-0.6 (0.2)		1.3 (1.0, 1.7)	
	Q4: [32.9, 2743.8]	-0.8 (0.2)		2.3 (1.7, 2.9)	
Serum aldosterone, pg/mL	Q1: [0.8, 71.2)	Ref	.8	Ref	.2
	Q2: [71.2, 101.4)	0.1 (0.2)		0.9 (0.7, 1.1)	
	Q3: [101.4, 152.8)	0.2 (0.2)		0.9 (0.7, 1.1)	
	Q4: [152.8, 15 630.9]	0.1 (0.2)		1.1 (0.9, 1.4)	

Abbreviations: ACE: angiotensin converting enzyme; ARB: angiotensin receptor blocker; BP: blood pressure; CI: confidence interval; CKD: chronic kidney disease; CVD: cardiovascular disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; FGF23: fibroblast growth factor-23; HR: hazard ratio; hsCRP: high-sensitivity C-reactive protein; hsTnT: high-sensitivity troponin T; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; PTH: parathyroid hormone; RAAS: renin-angiotensin-aldosterone system; Ref: reference; SE: standard error; UACR: urine albumin:creatinine ratio

SI conversion: To convert Uric acid to  $\mu\text{mol/L}$ , multiply by 59.485. To convert Hemoglobin to  $\text{g/L}$ , multiply by 0.01. To convert hsCRP to  $\text{nmol/L}$ , multiply by 9.524. To convert serum phosphate to  $\text{mmol/L}$ , multiply by 0.323. For serum bicarbonate, 1  $\text{mEq/L}$  is equivalent to 1  $\text{mmol/L}$ . For urine potassium, 1  $\text{mEq/24h}$  is equivalent to 1  $\text{mmol/d}$ . To convert serum aldosterone to  $\text{pmol/L}$ , multiply by 2.774.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

**Table S2a. Final multivariable-adjusted models of chronic kidney disease progression among CRIC participants without diabetes after exclusion of albuminuria**

		Without Diabetes				
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving		
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI) <sup>b</sup>	P value <sup>b</sup>	
<b>Demographic Factors</b>						
Age, years	<45	-0.7 (0.1)	<.001	Y0-6: 2.4 (1.7, 3.4)	Y0-6: <.001	
				Y6+: 2.4 (1.4, 3.9)		
	45-64	Ref		Ref		
	65-75	0.1 (0.1)		Y0-6: 0.7 (0.5, 1.0) Y6+: 0.8 (0.5, 1.3)		Y6+: <.001
Gender	Male	Ref	<.001	Ref	<.001	
	Female	0.8 (0.1)		0.4 (0.3, 0.5)		
Race/ ethnicity	NH-White	Ref	<.001	Ref	Y0-6: <.001	
	NH-Black, APOL1 low-risk	-0.2 (0.1)		Y0-6: 1.8 (1.3, 2.5) Y6+: 1.4 (0.9, 2.1)		
	NH-Black, APOL1 high-risk	-0.8 (0.2)		Y0-6: 3.7 (2.5, 5.4) Y6+: 1.3 (0.6, 2.5)		
	Hispanic	0.0 (0.2)		Y0-6: 1.3 (0.8, 2.1) Y6+: 1.9 (1.0, 3.8)		Y6+: .07
	Other	-0.7 (0.2)		Y0-6: 3.3 (1.9, 5.9) Y6+: 3.0 (1.2, 7.8)		
<b>Kidney Function Measures</b>						
Baseline eGFR, mL/min/ 1.73m <sup>2</sup>	<30	0.1 (0.2)	<.001	1.7 (1.3, 2.2)	<.001	
	30-44.9	Ref		Ref		
	45-59.9	0.2 (0.1)		0.5 (0.4, 0.6)		
	≥60	0.7 (0.1)		0.2 (0.1, 0.3)		
<b>Blood Pressure Factors</b>						
Systolic BP, mmHg	<120	Ref	<.001	Ref	<.001	
	120-139	-0.3 (0.1)		1.4 (1.1, 1.8)		
	≥140	-0.8 (0.1)		2.0 (1.5, 2.7)		
ACE/ARB	No	-	-	Ref	.01	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI) <sup>b</sup>	P value <sup>b</sup>
	Yes	-		1.3 (1.1, 1.7)	
<b>Behavioral Factor</b>					
Current smoker	No	-	-	Ref	.08
	Yes	-		1.3 (1.0, 1.8)	
<b>Body Composition Measures</b>					
Fat-free mass, kg	Q1: [25.8, 49.1)	Ref	.04	Ref	.01
	Q2: [49.1, 59.1)	0.3 (0.1)		0.7 (0.5, 0.9)	
	Q3: [59.1, 69.9)	0.3 (0.2)		0.8 (0.5, 1.1)	
	Q4: [69.9, 167.1)	0.1 (0.2)		1.0 (0.7, 1.5)	
<b>Measure of Anemia</b>					
Hemoglobin, mg/dL	M: <12, F: <11	-	-	Y0-6: 1.2 (0.9, 1.6) Y6+: 0.9 (0.5, 1.4)	Y0-6: .2
	M: 12-13.9, F: 11-12.9	-		Ref	
	M: ≥14, F: ≥13	-		Y0-6: 0.8 (0.6, 1.2) Y6+: 0.5 (0.3, 0.8)	Y6+: .008
<b>Mineral Metabolism Markers</b>					
FGF23, RU/mL	Q1: [1.4, 94.1)	-	-	Ref	.03
	Q2: [94.1, 139.1)	-		1.3 (1.0, 1.9)	
	Q3: [139.1, 225.5)	-		1.6 (1.1, 2.2)	
	Q4: [225.5, 14 318.9]	-		1.7 (1.2, 2.4)	
<b>Cardiac Markers</b>					
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	.009	Ref	Y0-6: .002  Y6+: .3
	Q2: [60.2, 139.4)	-0.2 (0.1)		Y0-6: 1.6 (1.1, 2.5) Y6+: 0.8 (0.5, 1.4)	
	Q3: [139.4, 366.6)	-0.5 (0.1)		Y0-6: 2.2 (1.4, 3.4) Y6+: 1.3 (0.8, 2.2)	
	Q4: [366.6, 33 742]	-0.4 (0.2)		Y0-6: 2.2 (1.4, 3.5) Y6+: 1.2 (0.7, 2.1)	
<b>Acidosis Marker</b>					
	≤22	-	-	1.7 (1.3, 2.3)	.003
	(22, 24]	-		Ref	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI) <sup>b</sup>	P value <sup>b</sup>
Serum bicarbonate, mmol/L	(24, 26]	-		1.3 (0.9, 1.8)	
	>26	-		1.3 (0.9, 1.8)	
<b>Urinary Electrolytes</b>					
Urine potassium, mmol/24h	Q1: [3.0, 37.5)	Ref	.04	-	-
	Q2: [37.5, 51.8)	-0.1 (0.1)		-	
	Q3: [51.8, 69.4)	-0.3 (0.1)		-	
	Q4: [69.4, 417.7]	0.0 (0.1)		-	
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	<.001	Ref	<.001
	Q2: [6.3, 14.2)	-0.4 (0.1)		2.0 (1.4, 2.9)	
	Q3: [14.2, 32.9)	-0.5 (0.1)		2.0 (1.4, 2.9)	
	Q4: [32.9, 2743.8]	-0.7 (0.2)		2.7 (1.8, 4.0)	

Abbreviations: ACE: angiotensin converting enzyme; ARB: angiotensin receptor blocker; BP: blood pressure; CI: confidence interval; CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; FGF23: fibroblast growth factor-23; HR: hazard ratio; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; Ref: reference; SE: standard error

SI conversion: To convert Uric acid to  $\mu\text{mol/L}$ , multiply by 59.485. To convert Hemoglobin to g/L, multiply by 0.01. To convert serum phosphate to mmol/L, multiply by 0.323. For serum bicarbonate, 1 mEq/L is equivalent to 1 mmol/L. For urine potassium, 1 mEq/24h is equivalent to 1 mmol/d.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

<sup>b</sup> HRs and p-values for factors with significant interactions with time are depicted separately for years 0 through 6 (Y0-6) and 6+ years (Y6+).



**Table S2b. Final multivariable-adjusted models of chronic kidney disease progression among CRIC participants with diabetes after exclusion of albuminuria**

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI) <sup>b</sup>	P value <sup>b</sup>
<b>Demographic Factors</b>					
Age, years	<45	-1.0 (0.3)	<.001	Y0-6: 1.5 (1.1, 2.1)	<.001
				Y6+: 2.5 (1.5, 4.0)	
	45-64	Ref		Ref	
	65-75	0.3 (0.2)		Y0-6: 0.6 (0.5, 0.8) Y6+: 0.7 (0.5, 1.1)	
Gender	Male	Ref	<.001	Ref	<.001
	Female	0.7 (0.2)		0.6 (0.5, 0.7)	
Race/ ethnicity	NH-White	Ref	<.001	Ref	<.001
	NH-Black, APOL1 low-risk	-0.4 (0.2)		1.3 (1.0, 1.6)	
	NH-Black, APOL1 high-risk	-1.5 (0.3)		1.8 (1.3, 2.5)	
	Hispanic	-0.8 (0.2)		1.7 (1.2, 2.2)	
	Other	-0.5 (0.3)		1.5 (1.0, 2.2)	
<b>Kidney Function Measure</b>					
Baseline eGFR, mL/min/ 1.73m <sup>2</sup>	<30	0.6 (0.2)	<.001	Y0-6: 1.4 (1.1, 1.8)	Y0-6: <.001  Y6+: .004
				Y6+: 2.1 (1.3, 3.4)	
	30-44.9	Ref		Ref	
	45-59.9	-0.4 (0.2)		Y0-6: 0.7 (0.5, 0.9) Y6+: 0.8 (0.5, 1.2)	
	≥60	-0.6 (0.2)		Y0-6: 0.5 (0.3, 0.8)	
				Y6+: 0.8 (0.5, 1.5)	
<b>Blood Pressure Factor</b>					
Systolic BP, mmHg	< 120	Ref	<.001	Ref	<.001
	120-139	-0.5 (0.2)		1.6 (1.3, 2.0)	
	≥ 140	-1.2 (0.2)		2.4 (1.9, 3.0)	
<b>Clinical Factors</b>					
History of CVD	No	-	-	Ref	.04
	Yes	-		1.2 (1.0, 1.4)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI) <sup>b</sup>	P value <sup>b</sup>
<b>Behavioral Factor</b>					
Current smoker	No	Ref	.07	Ref	.03
	Yes	-0.4 (0.2)		1.3 (1.0, 1.7)	
<b>Inflammatory Marker and Chemokines</b>					
Serum fractalkine (CX3CL1), pg/mL	Q1: [0.1, 0.6)	Ref	<.001	Ref	<.001
	Q2: [0.6, 0.8)	-0.2 (0.2)		1.3 (1.0, 1.9)	
	Q3: [0.8, 1.1)	-0.7 (0.2)		1.8 (1.3, 2.4)	
	Q4: [1.1, 3.6]	-0.7 (0.2)		1.9 (1.4, 2.5)	
Plasma CXCL12, pg/mL	Q1: [832.1, 2066.4)	-	-	Ref	Y0-6: .02 Y6+: .3
	Q2: [2066.4, 2410.5)	-		Y0-6: 1.2 (0.9, 1.7)	
	Q3: [2410.5, 2797.8)	-		Y6+: 1.2 (0.7, 2.0)	
	Q4: [2797.8, 6173.3]	-		Y0-6: 1.6 (1.2, 2.2)	
		-		Y6+: 0.9 (0.5, 1.5)	
	-	Y0-6: 1.4 (1.0, 1.9)			
	-	Y6+: 1.4 (0.8, 2.2)			
<b>Mineral Metabolism Markers</b>					
Intact PTH pg/mL	Q1: [1.9, 34.1)	0.3 (0.2)	.08.	1.1 (0.8, 1.5)	.05
	Q2: [34.1, 52.4)	Ref		Ref	
	Q3: [52.4, 84.7)	-0.1 (0.2)		1.1 (0.9, 1.5)	
	Q4: [84.5, 1483]	-0.2 (0.2)		1.4 (1.1, 1.8)	
<b>Carbohydrate Metabolism Markers</b>					
HbA1c, %	Q1: [3.5, 5.6)	Ref	.003	-	-
	Q2: [5.6, 6.2)	0.5 (0.4)		-	
	Q3: [6.2, 7.3)	0.2 (0.3)		-	
	Q4: [7.3, 15.2]	-0.2 (0.3)		-	
<b>Cardiac Markers</b>					
hsTnT, pg/mL	Q1: [1.5, 5.5)	-	-	Ref	.009
	Q2: [5.5, 11.4)	-		1.1 (0.7, 1.6)	
	Q3: (11.4, 22.2)	-		1.4 (0.9, 2.0)	
	Q4: (22.2, 738.7)	-		1.7 (1.1, 2.5)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	HR (95% CI) <sup>b</sup>	P value <sup>b</sup>
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	<.001	Ref	Y0-6: <.001  Y6+: .4
	Q2: [60.2, 139.4)	-0.6 (0.2)		Y0-6: 1.8 (1.2, 2.7)	
	Q3: [139.4, 366.6)	-0.7 (0.2)		Y6+: 1.1 (0.6, 1.9)	
	Q4: [366.6, 33 742]	-1.0 (0.2)		Y0-6: 1.7 (1.1, 2.6)	
				Y6+: 1.4 (0.8, 2.3)	
			Y0-6: 2.3 (1.5, 3.4)		
			Y6+: 1.5 (0.9, 2.6)		
<b>Acidosis Marker</b>					
Serum bicarbonate, mmol/L	≤22	-	-	Y0-6: 0.8 (0.6, 1.1)	Y0-6: .05  Y6+: .2
	(22, 24]	-		Y6+: 0.6 (0.4, 1.0)	
	(24, 26]	-		Ref	
	>26	-		Y0-6: 1.0 (0.7, 1.3)	
				Y6+: 0.9 (0.5, 1.4)	
			Y0-6: 0.7 (0.5, 0.9)		
			Y6+: 0.9 (0.6, 1.5)		
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	<.001	Ref	Y0-6: <.001  Y6+: .02
	Q2: [6.3, 14.2)	-0.5 (0.2)		Y0-6: 1.3 (0.9, 1.8)	
	Q3: [14.2, 32.9)	-0.8 (0.2)		Y6+: 1.0 (0.7, 1.7)	
	Q4: [32.9, 2743.8]	-1.3 (0.2)		Y0-6: 1.6 (1.2, 2.3)	
				Y6+: 1.2 (0.8, 1.9)	
			Y0-6: 3.2 (2.3, 4.4)		
			Y6+: 2.0 (1.2, 3.3)		

Abbreviations: BP: blood pressure; CI: confidence interval; CKD: chronic kidney disease; CVD: cardiovascular disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; HbA1c: glycosylated hemoglobin; HR: hazard ratio; hsTnT: high-sensitivity troponin T; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; PTH: parathyroid hormone; Ref: reference; SE: standard error

N/A indicates variable was excluded from analysis for indicated outcome due to multicollinearity with the outcome measure.

SI conversion: To convert serum bicarbonate, 1 mEq/L is equivalent to 1 mmol/L.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

<sup>b</sup> HRs and p-values for factors with significant interactions with time are depicted separately for years 0 through 6 (Y0-6) and 6+ years (Y6+).

**Table S3a. Multivariable-adjusted models of chronic kidney disease progression with albuminuria interaction among CRIC participants without diabetes**

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Demographic Factors</b>					
Gender	Male	Ref	<.001	Ref	.004
	Female	0.3 (0.1)		-1.3 (0.4)	
Gender* UACR	Male*<30 UACR	Ref	.2	Ref	.4
	Female*30-299 UACR	0.0 (0.2)		0.7 (0.5)	
	Female*≥300 UACR	0.6 (0.3)		0.6 (0.5)	
Race/ ethnicity	NH-White	Ref	<.001	Ref	.1
	NH-Black, APOL1 low-risk	0.2 (0.1)		0.0 (0.4)	
	NH-Black, APOL1 high-risk	-0.1 (0.2)		0.9 (0.5)	
	Hispanic	0.2 (0.3)		0.9 (0.5)	
	Other	-0.3 (0.3)		1.1 (0.8)	
Race/ ethnicity* UACR	NH-White*<30 UACR	Ref	<.001	Ref	.4
	NH-Black, APOL1 low-risk*30-299 UACR	-0.6 (0.3)		0.8 (0.4)	
	NH-Black, APOL1 high-risk*30-299 UACR	-0.8 (0.4)		0.7 (0.6)	
	Hispanic*30-299 UACR	0.6 (0.4)		-0.8 (0.7)	
	Other*30-299 UACR	-0.7 (0.5)		0.4 (0.9)	
	NH-Black, APOL1 low-risk*≥300 UACR	-1.1 (0.3)		0.6 (0.4)	
	NH-Black, APOL1 high-risk*≥300 UACR	-2.2 (0.5)		0.2 (0.6)	
	Hispanic*≥300 UACR	-0.5 (0.4)		-0.6 (0.6)	
	Other*≥300 UACR	-0.3 (0.6)		-0.2 (0.9)	
<b>Kidney Function Measures</b>					
Baseline eGFR, mL/min/ 1.73m <sup>2</sup>	<30	0.1 (0.3)	.004	0.9 (0.4)	<.001
	30-44.9	Ref		Ref	
	45-59.9	0.1 (0.2)		-1.0 (0.4)	
	≥60	0.3 (0.2)		-1.5 (0.5)	
	30-44.9 eGFR*<30 UACR	Ref	.1	Ref	.6

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Baseline eGFR*UACR	<30 eGFR*30-299 UACR	0.1 (0.4)		-0.4 (0.5)	
	45-59.9 eGFR*30-299 UACR	-0.1 (0.3)		0.3 (0.5)	
	≥60 eGFR*30-299 UACR	0.1 (0.3)		0.1 (0.7)	
	<30 eGFR*≥300 UACR	0.5 (0.4)		-0.3 (0.4)	
	45-59.9 eGFR*≥300 UACR	-0.8 (0.3)		0.6 (0.4)	
	≥60 eGFR*≥300 UACR	0.0 (0.5)		-0.4 (0.8)	
UACR, mg/g	<30	Ref	<.001	Ref	.2
	30-299	-0.3 (0.5)		1.7 (0.9)	
	≥300	0.6 (0.6)		1.5 (0.9)	
<b>Blood Pressure Factors</b>					
Systolic BP, mmHg	<120	Ref	<.001	Ref	.2
	120-139	-0.1 (0.1)		0.3 (0.3)	
	≥140	-0.4 (0.2)		0.7 (0.4)	
Systolic BP* UACR	<120 BP*<30 UACR	Ref	.06	Ref	.04
	120-139 BP*30-299 UACR	-0.1 (0.2)		-0.4 (0.4)	
	≥140 BP*30-299 UACR	0.3 (0.3)		-0.9 (0.5)	
	120-139 BP*≥300 UACR	-0.4 (0.3)		0.1 (0.4)	
	≥140 BP*≥300 UACR	-0.9 (0.4)		0.1 (0.5)	
ACE/ARB	No	Ref	.6	-	N/A
	Yes	0.2 (0.1)		-	
ACE/ARB* UACR	No*<30 UACR	Ref	.5	-	N/A
	Yes*30-299 UACR	-0.2 (0.2)		-	
	Yes*≥300 UACR	-0.2 (0.3)		-	
<b>Body Composition Measures</b>					
Fat-free mass, kg	Q1: [25.8, 49.1)	-	N/A	Ref	.6
	Q2: [49.1, 59.1)	-		-0.4 (0.4)	
	Q3: [59.1, 69.9)	-		-0.6 (0.5)	
	Q4: [69.9, 167.1)	-		-0.7 (0.6)	
Fat-free mass*UACR	Q1 FFM*<30 UACR	-	N/A	Ref	.1
	Q2 FFM*30-299 UACR	-		0.3 (0.5)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Q3 FFM*30-299 UACR	-		0.5 (0.6)	
	Q4 FFM*30-299 UACR	-		0.5 (0.7)	
	Q2 FFM*≥300 UACR	-		-0.2 (0.5)	
	Q3 FFM*≥300 UACR	-		0.2 (0.6)	
	Q4 FFM*≥300 UACR	-		1.0 (0.6)	
<b>Measure of Anemia</b>					
Hemoglobin, mg/dL	M: <12, F: <11	-	N/A	0.3 (0.3)	.05
	M: 12-13.9, F: 11-12.9	-		Ref	
	M: ≥14, F: ≥13	-		-0.7 (0.4)	
Hemoglobin* UACR	M: 12-13.9, F: 11-12.9 Hemoglobin*<30 UACR	-	N/A	Ref	.03
	M: <12, F: <11 Hemoglobin *30-299 UACR	-		-0.2 (0.4)	
	M: ≥14, F: ≥13 Hemoglobin*30-299 UACR	-		-0.2 (0.5)	
	M: <12, F: <11 Hemoglobin*≥300 UACR	-		-0.2 (0.4)	
	M: ≥14, F: ≥13 Hemoglobin*≥300 UACR	-		0.8 (0.4)	
<b>Mineral Metabolism Markers</b>					
Serum phosphate, mg/dL	Q1: [1.7, 3.3)	-0.2 (0.1)	.05	-	N/A
	Q2: [3.3, 3.7)	Ref		-	
	Q3: [3.7, 4.1)	0.1 (0.2)		-	
	Q4: [4.1, 9.3]	-0.1 (0.2)		-	
Serum phosphate* UACR	Q2 phosphate*<30 UACR	Ref	.3	-	N/A
	Q1 phosphate*30-299 UACR	-0.3 (0.3)		-	
	Q3 phosphate*30-299 UACR	-0.1 (0.3)		-	
	Q4 phosphate*30-299 UACR	0.2 (0.3)		-	
	Q1 phosphate*≥300 UACR	-0.2 (0.3)		-	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Q3 phosphate* $\geq$ 300 UACR	-0.7 (0.4)		-	
	Q4 phosphate* $\geq$ 300 UACR	-0.5 (0.4)		-	
<b>Cardiac Markers</b>					
hsTnT, pg/mL	Q1: [1.5, 5.5)	-	N/A	Ref	.004
	Q2: [5.5, 11.4)	-		0.7 (0.4)	
	Q3: (11.4, 22.2)	-		-0.7 (0.5)	
	Q4: (22.2, 738.7)	-		-0.3 (0.6)	
hsTnT*UACR	Q1 hsTnT* $<$ 30 UACR	-	N/A	Ref	.3
	Q2 hsTnT*30-299 UACR	-		-0.8 (0.5)	
	Q3 hsTnT*30-299 UACR	-		0.2 (0.6)	
	Q4 hsTnT*30-299 UACR	-		0.1 (0.7)	
	Q2 hsTnT* $\geq$ 300 UACR	-		-0.5 (0.4)	
	Q3 hsTnT* $\geq$ 300 UACR	-		0.6 (0.5)	
	Q4 hsTnT* $\geq$ 300 UACR	-		0.3 (0.7)	
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	.01	Ref	.04
	Q2: [60.2, 139.4)	0.0 (0.1)		0.4 (0.5)	
	Q3: [139.4, 366.6)	-0.2 (0.2)		0.9 (0.5)	
	Q4: [366.6, 33 742]	-0.1 (0.2)		1.3 (0.5)	
NTproBNP* UACR	Q1 NTproBNP* $<$ 30 UACR	Ref	.005	Ref	.03
	Q2 NTproBNP*30-299 UACR	-0.2 (0.3)		-0.3 (0.5)	
	Q3 NTproBNP*30-299 UACR	-0.6 (0.3)		-0.4 (0.5)	
	Q4 NTproBNP*30-299 UACR	-0.4 (0.4)		-1.0 (0.6)	
	Q2 NTproBNP* $\geq$ 300 UACR	-1.0 (0.3)		0.4 (0.5)	
	Q3 NTproBNP* $\geq$ 300 UACR	-0.1 (0.4)		-0.5 (0.5)	
	Q4 NTproBNP* $\geq$ 300 UACR	0.3 (0.4)		-1.1 (0.6)	
	$\leq$ 22	-	N/A	0.4 (0.4)	.03

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Serum bicarbonate, mmol/L	(22, 24]	-		Ref	
	(24, 26]	-		-0.9 (0.5)	
	>26	-		-0.2 (0.4)	
Serum bicarbonate* UACR	≤22 bicarbonate* <30 UACR	-	N/A	Ref	.4
	(22, 24] bicarbonate* 30-299 UACR	-		0.1 (0.4)	
	(24, 26] bicarbonate* 30-299 UACR	-		1.2 (0.6)	
	>26 bicarbonate* 30-299 UACR	-		0.4 (0.5)	
	(22, 24] bicarbonate* ≥300 UACR	-		-0.2 (0.4)	
	(24, 26] bicarbonate* ≥300 UACR	-		0.8 (0.5)	
	>26 bicarbonate* ≥300 UACR	-		0.1 (0.5)	
<b>Urinary Electrolytes</b>					
Urine potassium, mmol/24h	Q1: [3.0, 37.5)	Ref	.4	-	N/A
	Q2: [37.5, 51.8)	-0.1 (0.2)		-	
	Q3: [51.8, 69.4)	-0.2 (0.2)		-	
	Q4: [69.4, 417.7]	0.2 (0.2)		-	
Urine potassium* UACR	Q1 potassium* <30 UACR	Ref	.2	-	N/A
	Q2 potassium* 30-299 UACR	0.4 (0.3)		-	
	Q3 potassium* 30-299 UACR	0.2 (0.3)		-	
	Q4 potassium* 30-299 UACR	0.2 (0.3)		-	
	Q2 potassium* ≥300 UACR	-0.5 (0.4)		-	
	Q3 potassium* ≥300 UACR	-0.4 (0.4)		-	
	Q4 potassium* ≥300 UACR	-0.9 (0.4)		-	



		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	.02	Ref	.3
	Q2: [6.3, 14.2)	-0.2 (0.1)		0.7 (0.4)	
	Q3: [14.2, 32.9)	-0.2 (0.2)		0.4 (0.5)	
	Q4: [32.9, 2743.8]	-0.2 (0.2)		0.8 (0.5)	
Urine NGAL*UACR	Q1 NGAL*<30 UACR	Ref	.09	Ref	.2
	Q2 NGAL*30-299 UACR	-0.1 (0.3)		-0.4 (0.5)	
	Q3 NGAL*30-299 UACR	0.0 (0.3)		-0.3 (0.6)	
	Q4 NGAL*30-299 UACR	0.3 (0.3)		-0.9 (0.6)	
	Q2 NGAL*≥300 UACR	-0.4 (0.4)		0.0 (0.5)	
	Q3 NGAL*≥300 UACR	-0.6 (0.4)		0.2 (0.6)	
	Q4 NGAL*≥300 UACR	-1.2 (0.4)		0.2 (0.6)	
<b>RAAS Marker</b>					
Serum aldosterone, pg/mL	Q1: [0.8, 71.2)	Ref	.03	-	N/A
	Q2: [71.2, 101.4)	-0.1 (0.2)		-	
	Q3: [101.4, 152.8)	-0.2 (0.2)		-	
	Q4: [152.8, 15 630.9]	0.2 (0.2)		-	
Serum aldosterone* UACR	Q1 aldosterone*<30 UACR	Ref	.3	-	N/A
	Q2 aldosterone*30-299 UACR	-0.2 (0.3)		-	
	Q3 aldosterone*30-299 UACR	0.0 (0.3)		-	
	Q4 aldosterone*30-299 UACR	-0.3 (0.3)		-	
	Q2 aldosterone*≥300 UACR	-0.8 (0.4)		-	
	Q3 aldosterone*≥300 UACR	-0.2 (0.4)		-	
	Q4 aldosterone*≥300 UACR	-0.6 (0.4)		-	

Abbreviations: ACE: angiotensin converting enzyme; ARB: angiotensin receptor blocker; BP: blood pressure; CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; FFM: fat-free mass; hsTnT: high-sensitivity troponin T; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; RAAS: renin-angiotensin-aldosterone system; Ref: reference; SE: standard error; UACR: urine albumin:creatinine ratio

N/A indicates variable was excluded from analysis for indicated outcome as only variables selected by models described in Table 2 were tested for interaction.

SI conversion: To convert Hemoglobin to g/L, multiply by 0.01. To convert serum phosphate to mmol/L, multiply by 0.323. For serum bicarbonate, 1 mEq/L is equivalent to 1 mmol/L. For urine potassium, 1 mEq/24h is equivalent to 1 mmol/d. To convert serum aldosterone to pmol/L, multiply by 2.774.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

<sup>b</sup> Coefficients are the log hazard ratio to the reference level with positive coefficients indicating increased risk of KRT/eGFR Halving compared to the reference group.

\* Indicates interaction between variables. Sum of main and interaction beta coefficients will provide estimate for given group.

**Table S3b. Multivariable-adjusted models of chronic kidney disease progression with albuminuria interaction among CRIC participants with diabetes**

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Demographic Factors</b>					
Age, years	<45	-0.3 (0.4)	.03	0.1 (0.6)	.8
	45-64	Ref		Ref	
	65-75	-0.2 (0.2)		-0.2 (0.3)	
Age*UACR	45-64 age*<30 UACR	Ref	.2	Ref	.9
	<45 age*30-299 UACR	-0.5 (0.7)		-0.2 (0.7)	
	65-75 age*30-299 UACR	0.0 (0.3)		-0.1 (0.4)	
	<45 age*≥300 UACR	-0.3 (0.5)		0.2 (0.6)	
	65-75*≥300 UACR	0.8 (0.3)		-0.1 (0.3)	
Gender	Male	-	N/A	Ref	.5
	Female	-		-0.2 (0.3)	
Gender* UACR	Male*<30 UACR	-	N/A	Ref	.8
	Female*30-299 UACR	-		-0.1 (0.4)	
	Female*≥300 UACR	-		-0.2 (0.3)	
Race/ ethnicity	NH-White	Ref	<.001	Ref	.4
	NH-Black, APOL1 low-risk	-0.1 (0.2)		-0.1 (0.3)	
	NH-Black, APOL1 high-risk	-0.2 (0.5)		1.0 (0.5)	
	Hispanic	-0.1 (0.3)		0.2 (0.5)	
	Other	-0.5 (0.5)		0.3 (0.6)	
Race/ ethnicity* UACR	NH-White*<30 UACR	Ref	.02	Ref	.4
	NH-Black, APOL1 low-risk*30-299 UACR	-0.8 (0.3)		0.7 (0.4)	
	NH-Black, APOL1 high-risk*30-299 UACR	-1.2 (0.7)		-0.1 (0.6)	
	Hispanic*30-299 UACR	-1.3 (0.5)		0.7 (0.6)	
	Other*30-299 UACR	0.4 (0.7)		-0.3 (0.8)	
	NH-Black, APOL1 low-risk*≥300 UACR	-0.7 (0.3)		0.4 (0.4)	
	NH-Black, APOL1 high-risk*≥300 UACR	-1.1 (0.6)		-0.5 (0.5)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Hispanic* $\geq$ 300 UACR	-0.3 (0.4)		0.0 (0.6)	
	Other* $\geq$ 300 UACR	0.3 (0.7)		0.2 (0.7)	
<b>Kidney Function Measures</b>					
Baseline eGFR, mL/min/1.73m <sup>2</sup>	<30	0.2 (0.3)	<.001	1.2 (0.4)	<.001
	30-44.9	Ref		Ref	
	45-59.9	-0.2 (0.2)		-0.6 (0.4)	
	$\geq$ 60	-0.7 (0.3)		-0.4 (0.5)	
Baseline eGFR*UACR	<30 eGFR* $<$ 30 UACR	Ref	.1	Ref	.1
	30-44.9 eGFR*30-299 UACR	0.3 (0.5)		-0.6 (0.4)	
	45-59.9 eGFR*30-299 UACR	-0.3 (0.3)		0.4 (0.4)	
	$\geq$ 60 eGFR*30-299 UACR	0.2 (0.5)		0.0 (0.6)	
	30-44.9 eGFR* $\geq$ 300 UACR	0.9 (0.4)		-0.9 (0.4)	
	45-59.9 eGFR* $\geq$ 300 UACR	-0.4 (0.4)		0.4 (0.4)	
	$\geq$ 60 eGFR* $\geq$ 300 UACR	-0.5 (0.5)		-0.1 (0.6)	
UACR, mg/g	<30	Ref	<.001	Ref	.1
	30-299	-1.2 (0.5)		1.7 (1.3)	
	$\geq$ 300	-1.5 (0.7)		2.4 (1.2)	
<b>Blood Pressure Factors</b>					
Systolic BP, mmHg	<120	Ref	.002	Ref	.005
	120-139	-0.2 (0.2)		0.5 (0.3)	
	$\geq$ 140	-0.5 (0.3)		1.2 (0.4)	
Systolic BP* UACR	<120 BP* $<$ 30 UACR	Ref	.1	Ref	.1
	120-139 BP*30-299 UACR	0.3 (0.3)		-0.6 (0.4)	
	$\geq$ 140 BP*30-299 UACR	0.4 (0.4)		-1.2 (0.4)	
	120-139 BP* $\geq$ 300 UACR	-0.3 (0.4)		-0.3 (0.4)	
	$\geq$ 140 BP* $\geq$ 300 UACR	-0.8 (0.4)		-0.7 (0.4)	
<b>Behavioral Factor</b>					
Current smoker	No	Ref	.07	-	N/A
	Yes	-0.3 (0.3)		-	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Current smoker* UACR	No* <30 UACR	Ref	.9	-	N/A
	Yes* 30-299 UACR	-0.1 (0.5)		-	
	Yes* ≥300 UACR	0.0 (0.5)		-	
<b>Inflammatory Marker and Chemokines</b>					
Serum fractalkine (CX3CL1), pg/mL	Q1: [0.1, 0.6)	Ref	.01	Ref	.2
	Q2: [0.6, 0.8)	0.0 (0.2)		-0.3 (0.4)	
	Q3: [0.8, 1.1)	-0.4 (0.2)		0.4 (0.4)	
	Q4: [1.1, 3.6]	-0.4 (0.3)		0.5 (0.4)	
Serum fractalkine (CX3CL1)* UACR	Q1 CX3CL1* <30 UACR	Ref	.6	Ref	.7
	Q2 CX3CL1* 30-299 UACR	0.3 (0.4)		0.4 (0.5)	
	Q3 CX3CL1* 30-299 UACR	0.3 (0.4)		0.0 (0.5)	
	Q4 CX3CL1* 30-299 UACR	0.5 (0.4)		-0.4 (0.5)	
	Q2 CX3CL1* ≥300 UACR	0.3 (0.5)		0.2 (0.5)	
	Q3 CX3CL1* ≥300 UACR	-0.2 (0.5)		-0.2 (0.5)	
	Q4 CX3CL1* ≥300 UACR	0.4 (0.5)		-0.4 (0.4)	
Plasma CXCL12, pg/mL	Q1: [832.1, 2066.4)	-	N/A	Ref	.3
	Q2: [2066.4, 2410.5)	-		0.1 (0.4)	
	Q3: [2410.5, 2797.8)	-		0.5 (0.5)	
	Q4: [2797.8, 6173.3]	-		0.7 (0.4)	
Plasma CXCL12* UACR	Q1 CXCL12* <30 UACR	-	N/A	Ref	.6
	Q2 CXCL12* 30-299 UACR	-		-0.3 (0.5)	
	Q3 CXCL12* 30-299 UACR	-		-0.5 (0.5)	
	Q4 CXCL12* 30-299 UACR	-		-0.5 (0.5)	
	Q2 CXCL12* ≥300 UACR	-		0.3 (0.5)	
	Q3 CXCL12* ≥300 UACR	-		0.0 (0.5)	
	Q4 CXCL12* ≥300 UACR	-		-0.2 (0.5)	
<b>Carbohydrate Metabolism Markers</b>					
HbA1c, %	Q1: [3.5, 5.6)	-	N/A	Ref	.6
	Q2: [5.6, 6.2)	-		0.7 (0.8)	
	Q3: [6.2, 7.3)	-		0.2 (0.8)	
	Q4: [7.3, 15.2]	-		0.6 (0.8)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
HbA1c* UACR	Q1 HbA1c*<30 UACR	-	N/A	Ref	.9
	Q2 HbA1c*30-299 UACR	-		0.0 (1.0)	
	Q3 HbA1c*30-299 UACR	-		0.1 (1.0)	
	Q4 HbA1c*30-299 UACR	-		-0.1 (0.9)	
	Q2 HbA1c*≥300 UACR	-		-0.3 (0.8)	
	Q3 HbA1c*≥300 UACR	-		-0.3 (0.8)	
	Q4 HbA1c*≥300 UACR	-		-0.6 (0.8)	
<b>Cardiac Markers</b>					
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	.01	Ref	.04
	Q2: [60.2, 139.4)	-0.5 (0.2)		0.9 (0.5)	
	Q3: [139.4, 366.6)	-0.6 (0.3)		0.8 (0.5)	
	Q4: [366.6, 33 742]	-0.7 (0.3)		1.4 (0.5)	
NTproBNP* UACR	Q1 NTproBNP*<30 UACR	Ref	.2	Ref	.1
	Q2 NTproBNP*30-299 UACR	-0.2 (0.4)		-0.2 (0.6)	
	Q3 NTproBNP*30-299 UACR	0.1 (0.4)		-0.1 (0.6)	
	Q4 NTproBNP*30-299 UACR	0.1 (0.4)		-0.9 (0.6)	
	Q2 NTproBNP*≥300 UACR	0.6 (0.4)		-0.7 (0.5)	
	Q3 NTproBNP*≥300 UACR	1.0 (0.5)		-0.7 (0.5)	
	Q4 NTproBNP*≥300 UACR	0.3 (0.5)		-0.9 (0.6)	
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	<.001	Ref	.5
	Q2: [6.3, 14.2)	-0.3 (0.2)		0.3 (0.4)	
	Q3: [14.2, 32.9)	-0.3 (0.2)		-0.2 (0.4)	
	Q4: [32.9, 2743.8]	-0.2 (0.3)		-0.1 (0.5)	
Urine NGAL* UACR	Q1 NGAL*<30 UACR	Ref	<.001	Ref	.003
	Q2 NGAL*30-299 UACR	0.3 (0.4)		-0.7 (0.4)	
	Q3 NGAL*30-299 UACR	0.1 (0.4)		0.1 (0.5)	
	Q4 NGAL*30-299 UACR	0.4 (0.4)		0.4 (0.6)	
	Q2 NGAL*≥300 UACR	-0.7 (0.4)		0.3 (0.4)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Q3 NGAL *≥300 UACR	-1.3 (0.4)		1.0 (0.4)	
	Q4 NGAL *≥300 UACR	-1.9 (0.4)		1.5 (0.5)	

Abbreviations: BP: blood pressure; CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; HbA1c: glycosylated hemoglobin; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; Ref: reference; SE: standard error; UACR: urine albumin:creatinine ratio

N/A indicates variable was excluded from analysis for indicated outcome as only variables selected by models described in Table 3 were tested for interaction.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

<sup>b</sup> Coefficients are the log hazard ratio to the reference level with positive coefficients indicating increased risk of KRT/eGFR Halving compared to the reference group.

\* Indicates interaction between variables. Sum of main and interaction beta coefficients will provide estimate for given group.

**Table S4a. Multivariable-adjusted models of chronic kidney disease progression with race interaction among CRIC participants without diabetes**

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Demographic Factors</b>					
Gender	Male	Ref	.2	Ref	.05
	Female	0.3 (0.1)		-0.5 (0.3)	
Race/ ethnicity	NH-White	Ref	<.001	Ref	.5
	NH-Black, APOL1 low-risk	0.8 (0.5)		0.3 (0.8)	
	NH-Black, APOL1 high-risk	-0.9 (0.8)		2.3 (1.3)	
	Hispanic	1.2 (1.0)		0.4 (1.3)	
	Other	-1.2 (1.6)		-2.1 (3.7)	
Gender*Race /ethnicity	Male*NH-White	Ref	.7	Ref	.8
	Female*NH-Black, APOL1 low-risk	0.2 (0.2)		-0.3 (0.4)	
	Female*NH-Black, APOL1 high-risk	-0.1 (0.4)		-0.6 (0.5)	
	Female*Hispanic	-0.4 (0.5)		-0.2 (0.9)	
	Female*Other	0.1 (0.8)		-1.9 (2.6)	
<b>Kidney Function Measures</b>					
Baseline eGFR, mL/min/ 1.73m <sup>2</sup>	<30	0.2 (0.2)	.005	0.4 (0.2)	<.001
	30-44.9	Ref		Ref	
	45-59.9	0.0 (0.2)		-0.7 (0.2)	
	≥60	0.1 (0.2)		-1.6 (0.4)	



		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Baseline eGFR*Race/ ethnicity	30-44.9 eGFR*NH-White	Ref	.5	Ref	.2
	<30 eGFR*NH-Black, APOL1 low-risk	0.4 (0.4)		0.4 (0.4)	
	45-59.9 eGFR*NH-Black, APOL1 low-risk	0.0 (0.3)		0.2 (0.4)	
	≥60 eGFR*NH-Black, APOL1 low-risk	0.2 (0.3)		0.6 (0.6)	
	<30 eGFR*NH-Black, APOL1 high-risk	1.2 (0.7)		-0.1 (0.5)	
	45-59.9 eGFR*NH-Black, APOL1 high-risk	0.9 (0.5)		-1.1 (0.5)	
	≥60 eGFR*NH-Black, APOL1 high-risk	0.7 (0.5)		-0.6 (0.9)	
	<30 eGFR*Hispanic	0.2 (0.7)		0.5 (0.5)	
	45-59.9 eGFR*Hispanic	0.3 (0.5)		0.5 (0.6)	
	≥60 eGFR*Hispanic	1.1 (0.7)		-11.9 (709.0)	
	<30 eGFR*Other	1.2 (1.7)		-1.4 (2.5)	
	45-59.9 eGFR*Other	-0.2 (1.0)		-5.5 (2.1)	
	≥60 eGFR*Other	1.2 (1.1)		-12.5 (5.0)	
UACR, mg/g	<30	Ref	<.001	Ref	<.001
	30-299	-0.8 (0.1)		1.1 (0.3)	
	≥300	-1.7 (0.2)		2.4 (0.3)	
UACR*Race/ ethnicity	<30 UACR*NH-White	Ref	<.001	Ref	.05
	30-299 UACR*NH-Black, APOL1 low-risk	-0.5 (0.2)		0.4 (0.4)	
	≥300 UACR*NH-Black, APOL1 low-risk	-1.0 (0.3)		0.4 (0.4)	
	30-299 UACR*NH-Black, APOL1 high-risk	-0.7 (0.4)		1.3 (0.6)	
	≥300 UACR*NH-Black, APOL1 high-risk	-2.4 (0.6)		1.1 (0.7)	
	30-299 UACR*Hispanic	0.8 (0.5)		-1.7 (0.8)	
	≥300 UACR*Hispanic	-0.1 (0.5)		-1.0 (0.7)	
	30-299 UACR*Other	0.3 (0.7)		1.7 (1.6)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	≥300 UACR*Other	0.1 (0.9)		4.4 (2.3)	
<b>Blood Pressure Factors</b>					
Systolic BP, mmHg	<120	Ref	.3	Ref	.3
	120-139	-0.1 (0.1)		0.2 (0.2)	
	≥140	-0.5 (0.2)		0.5 (0.3)	
Systolic BP*Race/ ethnicity	<120 BP*NH-White	Ref	.3	Ref	.03
	120-139 BP*NH-Black, APOL1 low-risk	-0.3 (0.2)		0.0 (0.3)	
	≥140 BP*NH-Black, APOL1 low-risk	-0.1 (0.3)		0.1 (0.4)	
	120-139 BP*NH-Black, APOL1 high-risk	-0.2 (0.4)		0.5 (0.4)	
	≥140 BP*NH-Black, APOL1 high-risk	1.4 (0.6)		-1.4 (0.6)	
	120-139 BP*Hispanic	-0.3 (0.4)		0.1 (0.6)	
	≥140 BP*Hispanic	0.2 (0.6)		0.1 (0.7)	
	120-139 BP*Other	-0.1 (0.7)		-2.0 (1.5)	
	≥140 BP*Other	0.2 (0.8)		5.2 (2.6)	
ACE/ARB	No	Ref	.04	-	N/A
	Yes	0.2 (0.1)		-	
ACE/ARB*Ra ce/ ethnicity	No*NH-White	Ref	.2	-	N/A
	Yes*NH-Black, APOL1 low- risk	-0.2 (0.2)		-	
	Yes*NH-Black, APOL1 high-risk	0.3 (0.4)		-	
	Yes*Hispanic	-0.3 (0.4)		-	
	Yes*Other	1.3 (0.7)		-	
<b>Body Composition Measures</b>					
Fat-free mass, kg	Q1: [25.8, 49.1)	-	N/A	Ref	.6
	Q2: [49.1, 59.1)	-		-0.1 (0.3)	
	Q3: [59.1, 69.9)	-		-0.3 (0.3)	
	Q4: [69.9, 167.1)	-		0.0 (0.3)	
	Q1 FFM*NH-White	-	N/A	Ref	<.001

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Fat-free mass*Race/ ethnicity	Q2 FFM*NH-Black, APOL1 low-risk	-		-0.5 (0.4)	
	Q3 FFM*NH-Black, APOL1 low-risk	-		0.4 (0.5)	
	Q4 FFM*NH-Black, APOL1 low-risk	-		0.0 (0.5)	
	Q2 FFM*NH-Black, APOL1 high-risk	-		-1.4 (0.6)	
	Q3 FFM*NH-Black, APOL1 high-risk	-		-2.5 (0.7)	
	Q4 FFM*NH-Black, APOL1 high-risk	-		-0.5 (0.6)	
	Q2 FFM*Hispanic	-		-1.4 (1.0)	
	Q3 FFM*Hispanic	-		-1.0 (0.9)	
	Q4 FFM*Hispanic	-		0.0 (1.0)	
	Q2 FFM*Other	-		1.8 (2.4)	
	Q3 FFM*Other	-		8.7 (3.6)	
	Q4 FFM*Other	-		2.5 (2.4)	
<b>Measure of Anemia</b>					
Hemoglobin, mg/dL	M: <12, F: <11	-	N/A	0.2 (0.3)	.3
	M: 12-13.9, F: 11-12.9	-		Ref	
	M: ≥14, F: ≥13	-		-0.3 (0.2)	
Hemoglobin* Race/ ethnicity	M: 12-13.9, F: 11-12.9 Hemoglobin*NH-White	-	N/A	Ref	.1
	M: <12, F: <11 Hemoglobin*NH-Black, APOL1 low-risk	-		-0.1 (0.4)	
	M: ≥14, F: ≥13 Hemoglobin*NH-Black, APOL1 low-risk	-		-0.3 (0.4)	
	M: <12, F: <11 Hemoglobin*NH-Black, APOL1 high-risk	-		-0.3 (0.5)	
	M: ≥14, F: ≥13 Hemoglobin*NH-Black, APOL1 high-risk	-		-1.1 (0.5)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	M: <12, F: <11 Hemoglobin*Hispanic	-		-0.4 (0.6)	
	M: ≥14, F: ≥13 Hemoglobin*Hispanic	-		0.0 (0.7)	
	M: <12, F: <11 Hemoglobin*Other	-		4.7 (1.7)	
	M: ≥14, F: ≥13 Hemoglobin*Other	-		0.5 (0.9)	
<b>Mineral Metabolism Markers</b>					
Serum phosphate, mg/dL	Q1: [1.7, 3.3)	-0.1 (0.1)	.2	-	N/A
	Q2: [3.3, 3.7)	Ref		-	
	Q3: [3.7, 4.1)	0.2 (0.2)		-	
	Q4: [4.1, 9.3]	-0.3 (0.2)		-	
Serum phosphate* Race/ ethnicity	Q2 phosphate*NH-White	Ref	.06	-	N/A
	Q1 phosphate*NH-Black, APOL1 low-risk	-0.6 (0.3)		-	
	Q3 phosphate*NH-Black, APOL1 low-risk	-0.3 (0.3)		-	
	Q4 phosphate*NH-Black, APOL1 low-risk	0.2 (0.3)		-	
	Q1 phosphate*NH-Black, APOL1 high-risk	-1.4 (0.5)		-	
	Q3 phosphate*NH-Black, APOL1 high-risk	-1.3 (0.5)		-	
	Q4 phosphate*NH-Black, APOL1 high-risk	-0.5 (0.6)		-	
	Q1 phosphate*Hispanic	-0.7 (0.5)		-	
	Q3 phosphate*Hispanic	-0.4 (0.5)		-	
	Q4 phosphate*Hispanic	0.4 (0.6)		-	
	Q1 phosphate*Other	0.8 (0.7)		-	
	Q3 phosphate*Other	-0.2 (0.7)		-	
Q4 phosphate*Other	0.2 (0.8)	-			
<b>Cardiac Markers</b>					
	Q1: [1.5, 5.5)	-	N/A	Ref	.2

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
hsTnT, pg/mL	Q2: [5.5, 11.4)	-		0.3 (0.2)	
	Q3: (11.4, 22.2)	-		-0.2 (0.3)	
	Q4: (22.2, 738.7)	-		-0.3 (0.3)	
hsTnT*Race/ ethnicity	Q1 hsTnT*NH-White	-	N/A	Ref	.3
	Q2 hsTnT*NH-Black, APOL1 low-risk	-		0.0 (0.4)	
	Q3 hsTnT*NH-Black, APOL1 low-risk	-		0.3 (0.4)	
	Q4 hsTnT*NH-Black, APOL1 low-risk	-		0.3 (0.5)	
	Q2 hsTnT*NH-Black, APOL1 high-risk	-		0.2 (0.5)	
	Q3 hsTnT*NH-Black, APOL1 high-risk	-		-1.2 (0.7)	
	Q4 hsTnT*NH-Black, APOL1 high-risk	-		0.4 (0.7)	
	Q2 hsTnT*Hispanic	-		-0.1 (0.6)	
	Q3 hsTnT*Hispanic	-		-0.2 (0.6)	
	Q4 hsTnT*Hispanic	-		-0.3 (0.8)	
	Q2 hsTnT*Other	-		3.9 (1.8)	
	Q3 hsTnT*Other	-		-10.0 (4.5)	
Q4 hsTnT*Other	-	-4.3 (2.9)			
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	.08	Ref	.03
	Q2: [60.2, 139.4)	-0.3 (0.1)		0.7 (0.3)	
	Q3: [139.4, 366.6)	-0.2 (0.2)		0.7 (0.3)	
	Q4: [366.6, 33 742]	-0.3 (0.2)		0.8 (0.3)	
NTproBNP* Race/ ethnicity	Q1 NTproBNP*NH-White	Ref	.2	Ref	.004
	Q2 NTproBNP*NH-Black, APOL1 low-risk	0.7 (0.3)		-0.5 (0.4)	
	Q3 NTproBNP*NH-Black, APOL1 low-risk	-0.2 (0.3)		-0.5 (0.4)	
	Q4 NTproBNP*NH-Black, APOL1 low-risk	0.0 (0.3)		-0.2 (0.5)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Q2 NTproBNP*NH-Black, APOL1 high-risk	0.1 (0.5)		-2.0 (0.6)	
	Q3 NTproBNP*NH-Black, APOL1 high-risk	-0.2 (0.5)		-0.8 (0.6)	
	Q4 NTproBNP*NH-Black, APOL1 high-risk	-0.2 (0.6)		-2.2 (0.7)	
	Q2 NTproBNP*Hispanic	-0.3 (0.6)		0.8 (0.8)	
	Q3 NTproBNP*Hispanic	-0.8 (0.6)		0.8 (0.9)	
	Q4 NTproBNP*Hispanic	0.1 (0.7)		0.6 (1.0)	
	Q2 NTproBNP*Other	0.1 (0.7)		-3.8 (1.5)	
	Q3 NTproBNP*Other	-0.7 (0.9)		5.1 (2.4)	
	Q4 NTproBNP*Other	0.6 (1.3)		-6.8 (263.7)	
<b>Acidosis Marker</b>					
Serum bicarbonate, mmol/L	≤22	-	N/A	0.5 (0.3)	.1
	(22, 24]	-		Ref	
	(24, 26]	-		0.0 (0.3)	
	>26	-		0.1 (0.3)	
Serum bicarbonate* Race/ethnicity	(22, 24] bicarbonate*NH-White	-	N/A	Ref	.08
	≤22 bicarbonate*NH-Black, APOL1 low-risk	-		-0.1 (0.4)	
	(24, 26] bicarbonate*NH-Black, APOL1 low-risk	-		0.0 (0.4)	
	>26 bicarbonate*NH-Black, APOL1 low-risk	-		-0.2 (0.4)	
	≤22 bicarbonate*NH-Black, APOL1 high-risk	-		-1.5 (0.5)	
	(24, 26] bicarbonate*NH-Black, APOL1 high-risk	-		-0.3 (0.5)	
	>26 bicarbonate*NH-Black, APOL1 high-risk	-		0.1 (0.6)	
	≤22 bicarbonate*Hispanic	-		-0.4 (0.6)	
	(24, 26] bicarbonate*Hispanic	-		-1.0 (0.8)	
	>26 bicarbonate*Hispanic	-		-0.5 (0.9)	

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	≤22 bicarbonate*Other	-		5.9 (2.6)	
	(24, 26] bicarbonate*Other	-		4.8 (2.4)	
	>26 bicarbonate*Other	-		0.0 (1.4)	
<b>Urinary Electrolytes</b>					
Urine potassium, mmol/24h	Q1: [3.0, 37.5)	Ref	.5	-	N/A
	Q2: [37.5, 51.8)	0.2 (0.2)		-	
	Q3: [51.8, 69.4)	-0.1 (0.2)		-	
	Q4: [69.4, 417.7]	0.1 (0.2)		-	
Urine potassium* Race/ethnicity	Q1 potassium*NH-White	Ref	.05	-	N/A
	Q2 potassium*NH-Black, APOL1 low-risk	-0.7 (0.3)		-	
	Q3 potassium*NH-Black, APOL1 low-risk	0.1 (0.3)		-	
	Q4 potassium*NH-Black, APOL1 low-risk	-0.2 (0.4)		-	
	Q2 potassium*NH-Black, APOL1 high-risk	0.3 (0.5)		-	
	Q3 potassium*NH-Black, APOL1 high-risk	0.2 (0.5)		-	
	Q4 potassium*NH-Black, APOL1 high-risk	-0.3 (0.5)		-	
	Q2 potassium*Hispanic	0.1 (0.6)		-	
	Q3 potassium*Hispanic	0.7 (0.6)		-	
	Q4 potassium*Hispanic	1.0 (0.5)		-	
	Q2 potassium*Other	-0.6 (1.3)		-	
	Q3 potassium*Other	-1.8 (1.3)		-	
Q4 potassium*Other	-1.0 (1.3)	-			
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	.1	Ref	.06
	Q2: [6.3, 14.2)	-0.2 (0.1)		0.4 (0.3)	
	Q3: [14.2, 32.9)	0.0 (0.2)		-0.1 (0.3)	
	Q4: [32.9, 2743.8]	-0.1 (0.2)		0.5 (0.3)	
	Q1 NGAL*NH-White	Ref	.5	Ref	.2

		Without Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Urine NGAL*Race/ ethnicity	Q2 NGAL*NH-Black, APOL1 low-risk	-0.3 (0.3)		0.2 (0.4)	
	Q3 NGAL*NH-Black, APOL1 low-risk	-0.5 (0.3)		0.5 (0.5)	
	Q4 NGAL*NH-Black, APOL1 low-risk	-0.5 (0.3)		0.0 (0.5)	
	Q2 NGAL*NH-Black, APOL1 high-risk	0.6 (0.6)		1.6 (0.9)	
	Q3 NGAL*NH-Black, APOL1 high-risk	-0.4 (0.6)		1.7 (1.0)	
	Q4 NGAL*NH-Black, APOL1 high-risk	-0.5 (0.6)		1.8 (1.0)	
	Q2 NGAL*Hispanic	-0.6 (0.6)		0.9 (1.1)	
	Q3 NGAL*Hispanic	-1.1 (0.6)		1.3 (1.0)	
	Q4 NGAL*Hispanic	-0.7 (0.7)		1.1 (1.0)	
	Q2 NGAL*Other	0.0 (0.8)		-6.3 (2.1)	
	Q3 NGAL*Other	-0.1 (0.8)		-0.4 (1.8)	
	Q4 NGAL*Other	-0.7 (1.0)		-2.5 (1.8)	
<b>RAAS Marker</b>					
Serum aldosterone, pg/mL	Q1: [0.8, 71.2)	Ref	.6	-	N/A
	Q2: [71.2, 101.4)	-0.1 (0.2)		-	
	Q3: [101.4, 152.8)	-0.3 (0.2)		-	
	Q4: [152.8, 15 630.9]	0.0 (0.2)		-	
Serum aldosterone* Race/ ethnicity	Q1 aldosterone*NH-White	Ref	.3	-	N/A
	Q2 aldosterone*NH-Black, APOL1 low-risk	-0.3 (0.3)		-	
	Q3 aldosterone*NH-Black, APOL1 low-risk	0.2 (0.3)		-	
	Q4 aldosterone*NH-Black, APOL1 low-risk	0.3 (0.3)		-	
	Q2 aldosterone*NH-Black, APOL1 high-risk	0.5 (0.6)		-	
	Q3 aldosterone*NH-Black, APOL1 high-risk	0.9 (0.6)		-	



	Without Diabetes			
	eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
	Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Q4 aldosterone*NH-Black, APOL1 high-risk	0.5 (0.5)		-	
Q2 aldosterone*Hispanic	-1.3 (0.5)		-	
Q3 aldosterone*Hispanic	-0.6 (0.5)		-	
Q4 aldosterone*Hispanic	-0.4 (0.7)		-	
Q2 aldosterone*Other	0.7 (0.8)		-	
Q3 aldosterone*Other	0.6 (0.9)		-	
Q4 aldosterone*Other	0.1 (0.8)		-	

Abbreviations: ACE: angiotensin converting enzyme; ARB: angiotensin receptor blocker; BP: blood pressure; CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; FFM: fat-free mass; hsTnT: high-sensitivity troponin T; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; RAAS: renin-angiotensin-aldosterone system; Ref: reference; SE: standard error; UACR: urine albumin:creatinine ratio

N/A indicates variable was excluded from analysis for indicated outcome as only variables selected by models described in Table 2 were tested for interaction.

SI conversion: To convert Hemoglobin to g/L, multiply by 0.01. To convert serum phosphate to mmol/L, multiply by 0.323. For serum bicarbonate, 1 mEq/L is equivalent to 1 mmol/L. For urine potassium, 1 mEq/24h is equivalent to 1 mmol/d. To convert serum aldosterone to pmol/L, multiply by 2.774.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

<sup>b</sup> Coefficients are the log hazard ratio to the reference level with positive coefficients indicating increased risk of KRT/eGFR Halving compared to the reference group.

\* Indicates interaction between variables. Sum of main and interaction beta coefficients will provide estimate for given group.

**Table S4b. Multivariable-adjusted models of chronic kidney disease progression with race interaction among CRIC participants with diabetes**

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Demographic Factors</b>					
Age, years	<45	-0.5 (0.3)	.5	0.0 (0.3)	.03
	45-64	Ref		Ref	
	65-75	0.0 (0.2)		-0.5 (0.2)	
Race/ ethnicity	NH-White	Ref	.02	Ref	.9
	NH-Black, APOL1 low-risk	0.1 (0.6)		-0.3 (0.9)	
	NH-Black, APOL1 high-risk	-0.5 (1.4)		0.2 (1.7)	
	Hispanic	-0.8 (0.8)		-1.0 (1.5)	
	Other	0.5 (1.4)		-0.1 (2.6)	
Age*Race/ ethnicity	45-64 age*NH-White	Ref	.7	Ref	.2
	<45 age*NH-Black, APOL1 low-risk	-0.7 (0.6)		0.5 (0.4)	
	65-75 age*NH-Black, APOL1 low-risk	0.0 (0.3)		0.3 (0.3)	
	<45 age*NH-Black, APOL1 high-risk	0.6 (1.1)		-0.9 (0.7)	
	65-75 age*NH-Black, APOL1 high-risk	-0.6 (0.7)		0.7 (0.5)	
	<45 age*Hispanic	0.2 (0.7)		0.7 (0.4)	
	65-75 age*Hispanic	0.5 (0.4)		0.1 (0.3)	
	<45 age*Other	0.1 (1.6)		1.3 (1.3)	
	65-75 age*Other	-0.6 (0.8)		1.1 (0.9)	
Gender	Male	-	N/A	Ref	.2
	Female	-		-0.3 (0.2)	
Gender*Race/ ethnicity	Male*NH-White	-	N/A	Ref	.02
	Female*NH-Black, APOL1 low-risk	-		-0.1 (0.3)	
	Female*NH-Black, APOL1 high-risk	-		-0.2 (0.5)	
	Female*Hispanic	-		-0.2 (0.3)	
	Female*Other	-		-3.6 (1.1)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Kidney Function Measures</b>					
Baseline eGFR, mL/min/1.73m <sup>2</sup>	<30	0.2 (0.3)	<.001	0.7 (0.2)	<.001
	30-44.9	Ref		Ref	
	45-59.9	-0.4 (0.2)		-0.3 (0.2)	
	≥60	-0.6 (0.3)		-0.9 (0.4)	
Baseline eGFR*Race/ethnicity	30-44.9 eGFR*NH-White	Ref	.7	Ref	.2
	<30 eGFR*NH-Black, APOL1 low-risk	0.6 (0.4)		-0.4 (0.3)	
	45-59.9 eGFR*NH-Black, APOL1 low-risk	0.0 (0.3)		0.1 (0.3)	
	≥60 eGFR*NH-Black, APOL1 low-risk	-0.1 (0.5)		1.0 (0.5)	
	<30 eGFR*NH-Black, APOL1 high-risk	1.5 (0.9)		-1.1 (0.5)	
	45-59.9 eGFR*NH-Black, APOL1 high-risk	0.2 (0.7)		0.0 (0.5)	
	≥60 eGFR*NH-Black, APOL1 high-risk	-0.7 (1.1)		1.3 (0.9)	
	<30 eGFR*Hispanic	0.7 (0.5)		-0.2 (0.3)	
	45-59.9 eGFR*Hispanic	0.3 (0.4)		-0.2 (0.4)	
	≥60 eGFR*Hispanic	-0.3 (0.8)		0.5 (0.7)	
	<30 eGFR*Other	0.5 (1.1)		1.2 (1.2)	
	45-59.9 eGFR*Other	0.1 (0.8)		0.0 (1.0)	
≥60 eGFR*Other	-1.9 (1.3)	1.0 (1.4)			
UACR, mg/g	<30	Ref	<.001	Ref	<.001
	30-299	-0.7 (0.2)		0.7 (0.2)	
	≥300	-2.0 (0.3)		1.6 (0.2)	
UACR*Race/ethnicity	<30 UACR*NH-White	Ref	.04	Ref	.3
	30-299 UACR*NH-Black, APOL1 low-risk	-0.7 (0.3)		0.6 (0.4)	
	≥300 UACR*NH-Black, APOL1 low-risk	-1.0 (0.4)		0.7 (0.4)	
	30-299 UACR*NH-Black, APOL1 high-risk	-0.9 (0.7)		0.6 (0.7)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	≥300 UACR*NH-Black, APOL1 high-risk	-1.2 (0.8)		0.2 (0.7)	
	30-299 UACR*Hispanic	-1.4 (0.5)		0.9 (0.5)	
	≥300 UACR*Hispanic	-0.7 (0.5)		0.4 (0.5)	
	30-299 UACR*Other	0.1 (0.9)		-2.5 (1.9)	
	≥300 UACR*Other	0.5 (0.9)		-2.1 (1.6)	
<b>Blood Pressure Factors</b>					
Systolic BP, mmHg	<120	Ref	.006	Ref	.002
	120-139	-0.1 (0.2)		0.2 (0.2)	
	≥140	-0.6 (0.3)		0.8 (0.2)	
Systolic BP*Race/ ethnicity	<120 BP*NH-White	Ref	.6	Ref	.6
	120-139 BP*NH-Black, APOL1 low-risk	-0.3 (0.3)		0.0 (0.3)	
	≥140 BP*NH-Black, APOL1 low-risk	0.0 (0.4)		-0.5 (0.3)	
	120-139 BP*NH-Black, APOL1 high-risk	0.7 (0.8)		-0.5 (0.6)	
	≥140 BP*NH-Black, APOL1 high-risk	-0.6 (0.8)		-0.4 (0.6)	
	120-139 BP*Hispanic	0.2 (0.5)		-0.1 (0.4)	
	≥140 BP*Hispanic	0.2 (0.5)		-0.2 (0.4)	
	120-139 BP*Other	-0.6 (0.9)		1.2 (1.4)	
≥140 BP*Other	-0.9 (1.2)	0.7 (1.6)			
<b>Behavioral Factor</b>					
Current smoker	No	Ref	.2	-	N/A
	Yes	-0.6 (0.3)		-	
Current smoker*Race /ethnicity	No*NH-White	Ref	.2	-	N/A
	Yes*NH-Black, APOL1 low- risk	0.4 (0.4)		-	
	Yes*NH-Black, APOL1 high-risk	-1.0 (0.8)		-	
	Yes*Hispanic	1.4 (0.8)		-	
	Yes*Other	0.0 (1.6)		-	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
<b>Inflammatory Marker and Chemokines</b>					
Serum fractalkine (CX3CL1), pg/mL	Q1: [0.1, 0.6)	Ref	.007	Ref	.9
	Q2: [0.6, 0.8)	-0.1 (0.3)		0.0 (0.3)	
	Q3: [0.8, 1.1)	-0.1 (0.3)		0.1 (0.3)	
	Q4: [1.1, 3.6]	-0.2 (0.3)		0.1 (0.3)	
Serum fractalkine (CX3CL1)* Race/ ethnicity	Q1 CXCL1*NH-White	Ref	.05	Ref	.2
	Q2 CXCL1*NH-Black, APOL1 low-risk	-0.2 (0.4)		0.4 (0.4)	
	Q3 CXCL1*NH-Black, APOL1 low-risk	-0.7 (0.4)		0.6 (0.4)	
	Q4 CXCL1*NH-Black, APOL1 low-risk	-0.6 (0.4)		0.7 (0.4)	
	Q2 CXCL1*NH-Black, APOL1 high-risk	1.3 (0.9)		-1.0 (0.7)	
	Q3 CXCL1*NH-Black, APOL1 high-risk	-0.5 (0.9)		0.3 (0.7)	
	Q4 CXCL1*NH-Black, APOL1 high-risk	1.9 (0.9)		-0.3 (0.7)	
	Q2 CXCL1*Hispanic	0.7 (0.6)		-0.2 (0.5)	
	Q3 CXCL1*Hispanic	-0.1 (0.6)		0.2 (0.5)	
	Q4 CXCL1*Hispanic	-0.1 (0.6)		0.1 (0.5)	
	Q2 CXCL1*Other	1.2 (1.0)		0.9 (1.2)	
	Q3 CXCL1*Other	0.0 (1.1)		-1.8 (1.2)	
Q4 CXCL1*Other	-0.4 (1.2)	1.5 (1.5)			
Plasma CXCL12, pg/mL	Q1: [832.1, 2066.4)	-	N/A	Ref	.7
	Q2: [2066.4, 2410.5)	-		0.3 (0.3)	
	Q3: [2410.5, 2797.8)	-		0.1 (0.3)	
	Q4: [2797.8, 6173.3]	-		0.2 (0.3)	
Plasma CXCL12* Race/ ethnicity	Q1 CXCL12*NH-White	-	N/A	Ref	.1
	Q2 CXCL12*NH-Black, APOL1 low-risk	-		-0.2 (0.4)	
	Q3 CXCL12*NH-Black, APOL1 low-risk	-		0.6 (0.3)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Q4 CXCL12*NH-Black, APOL1 low-risk	-		0.5 (0.3)	
	Q2 CXCL12*NH-Black, APOL1 high-risk	-		-0.2 (0.7)	
	Q3 CXCL12*NH-Black, APOL1 high-risk	-		0.4 (0.7)	
	Q4 CXCL12*NH-Black, APOL1 high-risk	-		-0.1 (0.7)	
	Q2 CXCL12*Hispanic	-		-0.6 (0.5)	
	Q3 CXCL12*Hispanic	-		0.4 (0.5)	
	Q4 CXCL12*Hispanic	-		0.0 (0.4)	
	Q2 CXCL12*Other	-		0.5 (1.0)	
	Q3 CXCL12*Other	-		-1.1 (1.2)	
	Q4 CXCL12*Other	-		-2.9 (1.4)	
<b>Carbohydrate Metabolism Markers</b>					
HbA1c, %	Q1: [3.5, 5.6)	-	N/A	Ref	.4
	Q2: [5.6, 6.2)	-		0.6 (0.5)	
	Q3: [6.2, 7.3)	-		0.2 (0.5)	
	Q4: [7.3, 15.2]	-		0.3 (0.5)	
HbA1c*Race/ ethnicity	Q1 HbA1c*NH-White	-	N/A	Ref	.6
	Q2 HbA1c*NH-Black, APOL1 low-risk	-		-0.7 (0.6)	
	Q3 HbA1c*NH-Black, APOL1 low-risk	-		-0.3 (0.6)	
	Q4 HbA1c*NH-Black, APOL1 low-risk	-		-0.5 (0.6)	
	Q2 HbA1c*NH-Black, APOL1 high-risk	-		1.3 (1.0)	
	Q3 HbA1c*NH-Black, APOL1 high-risk	-		0.0 (0.9)	
	Q4 HbA1c*NH-Black, APOL1 high-risk	-		0.5 (0.9)	
	Q2 HbA1c*Hispanic	-		0.3 (0.8)	
Q3 HbA1c*Hispanic	-	0.1 (0.8)			

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
	Q4 HbA1c*Hispanic	-		0.1 (0.8)	
	Q2 HbA1c*Other	-		1.3 (1.9)	
	Q3 HbA1c*Other	-		0.6 (1.5)	
	Q4 HbA1c*Other	-		1.4 (1.5)	
<b>Cardiac Markers</b>					
NTproBNP, pg/mL	Q1: [2.5, 60.2)	Ref	.03	Ref	.2
	Q2: [60.2, 139.4)	-0.4 (0.3)		0.5 (0.3)	
	Q3: [139.4, 366.6)	-0.5 (0.3)		0.5 (0.3)	
	Q4: [366.6, 33 742]	-0.7 (0.3)		0.6 (0.3)	
NTproBNP* Race/ ethnicity	Q1 NTproBNP*NH-White	Ref	.9	Ref	.5
	Q2 NTproBNP*NH-Black, APOL1 low-risk	0.0 (0.4)		0.0 (0.4)	
	Q3 NTproBNP*NH-Black, APOL1 low-risk	0.1 (0.4)		0.1 (0.4)	
	Q4 NTproBNP*NH-Black, APOL1 low-risk	0.1 (0.4)		0.3 (0.4)	
	Q2 NTproBNP*NH-Black, APOL1 high-risk	-0.1 (0.8)		-0.4 (0.7)	
	Q3 NTproBNP*NH-Black, APOL1 high-risk	-0.2 (1.0)		0.0 (0.8)	
	Q4 NTproBNP*NH-Black, APOL1 high-risk	0.1 (1.0)		0.0 (0.8)	
	Q2 NTproBNP*Hispanic	-0.2 (0.6)		-0.1 (0.5)	
	Q3 NTproBNP*Hispanic	0.7 (0.6)		-0.9 (0.5)	
	Q4 NTproBNP*Hispanic	0.1 (0.6)		-0.3 (0.5)	
	Q2 NTproBNP*Other	-0.9 (1.0)		-2.3 (1.7)	
	Q3 NTproBNP*Other	-0.4 (1.1)		-1.6 (1.4)	
Q4 NTproBNP*Other	-0.7 (1.1)	-2.9 (1.7)			
<b>Kidney Injury Marker</b>					
Urine NGAL, ng/ml	Q1: [0.4, 6.3)	Ref	.03	Ref	.02
	Q2: [6.3, 14.2)	-0.3 (0.2)		0.1 (0.2)	
	Q3: [14.2, 32.9)	-0.7 (0.3)		0.4 (0.2)	
	Q4: [32.9, 2743.8]	-0.2 (0.3)		0.8 (0.3)	

		With Diabetes			
		eGFR Slope, mL/min/1.73m <sup>2</sup> /year		KRT/eGFR Halving	
		Beta Coefficient <sup>a</sup> (SE)	P value	Beta Coefficient <sup>b</sup> (SE)	P value
Urine NGAL* Race/ ethnicity	Q1 NGAL*NH-White	Ref	.6	Ref	.2
	Q2 NGAL*NH-Black, APOL1 low-risk	0.1 (0.4)		-0.1 (0.3)	
	Q3 NGAL*NH-Black, APOL1 low-risk	0.5 (0.4)		-0.5 (0.3)	
	Q4 NGAL*NH-Black, APOL1 low-risk	-0.3 (0.4)		-0.3 (0.4)	
	Q2 NGAL*NH-Black, APOL1 high-risk	-0.6 (0.9)		0.6 (0.8)	
	Q3 NGAL*NH-Black, APOL1 high-risk	-0.4 (0.9)		0.8 (0.8)	
	Q4 NGAL*NH-Black, APOL1 high-risk	-1.8 (1.0)		1.5 (0.9)	
	Q2 NGAL*Hispanic	0.4 (0.6)		-0.2 (0.6)	
	Q3 NGAL*Hispanic	0.0 (0.5)		-0.1 (0.5)	
	Q4 NGAL*Hispanic	-0.7 (0.6)		0.3 (0.5)	
	Q2 NGAL*Other	0.4 (0.9)		-0.1 (1.6)	
	Q3 NGAL*Other	0.8 (1.0)		3.6 (1.6)	
	Q4 NGAL*Other	-1.0 (1.1)		3.5 (1.5)	

Abbreviations: BP: blood pressure; CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; HbA1c: glycosylated hemoglobin; NGAL: neutrophil gelatinase-associated lipocalin; NH: non-Hispanic; NTproBNP: N-terminal pro-B-type natriuretic peptide; Ref: reference; SE: standard error; UACR: urine albumin:creatinine ratio

N/A indicates variable was excluded from analysis for indicated outcome as only variables selected by models described in Table 3 were tested for interaction.

SI conversion: To convert Uric acid to  $\mu\text{mol/L}$ , multiply by 59.485. For serum bicarbonate, 1 mEq/L is equivalent to 1 mmol/L.

<sup>a</sup> Negative coefficients represent a faster decline in eGFR compared to the reference group.

<sup>b</sup> Coefficients are the log hazard ratio to the reference level with positive coefficients indicating increased risk of KRT/eGFR Halving compared to the reference group.

\* Indicates interaction between variables. Sum of main and interaction beta coefficients will provide estimate for given group.



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