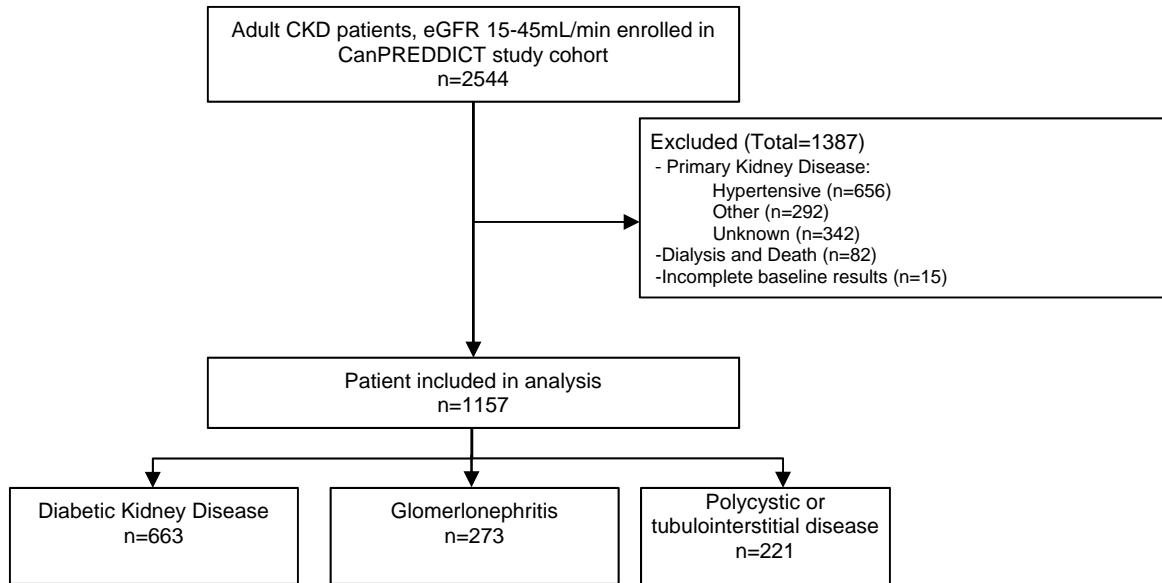


## Online-Only Supplemental Material

**Figure S1:** Cohort Derivation

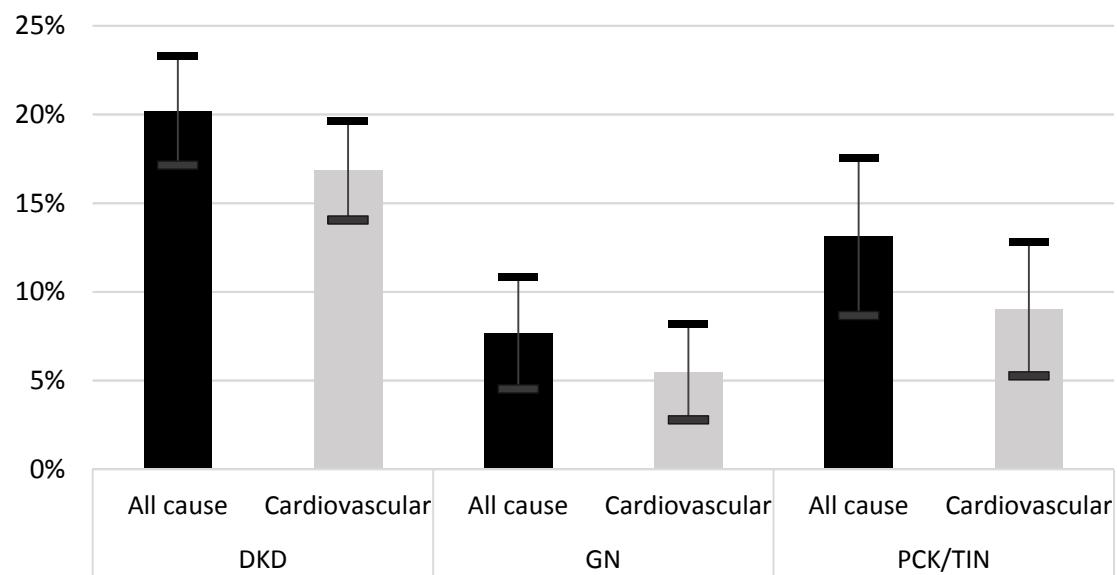


**Table S1:** Baseline demographic, renal specific and biomarkers by event

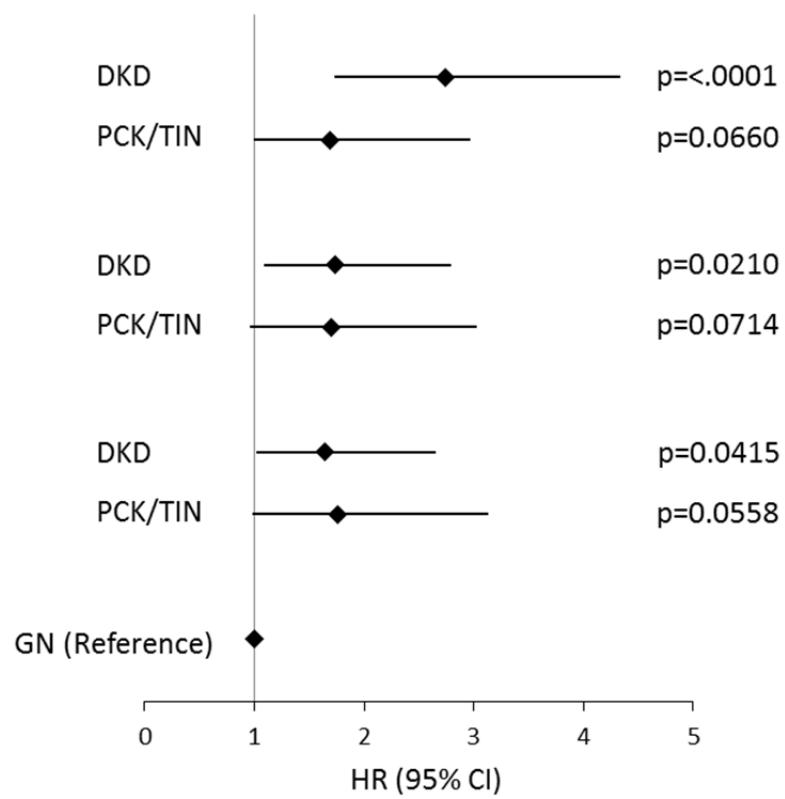
Variables	Outcome			<i>P</i> value
	No event	Death before dialysis	Dialysis, no death	
N	707	184	266	
Age (in years)	65±13	73±9	58±13	<0.001
Systolic BP (mmHg)	133±19	134±20	138±21	0.003
Diastolic BP (mmHg)	72±12	66±12	76±13	<0.001
Gender (% Male)	62%	64%	65%	0.61
Race (% Caucasian)	87%	92%	80%	0.004
Diabetes	61%	83%	58%	<0.001
History of CVD				<0.001
Ischemic	18%	23%	12%	
Congestive	8%	15%	8%	
Ischemic+Congestive	10%	35%	10%	
eGFR mL/min/1.73m <sup>2</sup>	30±9	25±7	22±7	<0.001
eGFR				
<20 mL/min/1.73m <sup>2</sup>	13%	25.5%	53%	<0.001
20-29 mL/min/1.73m <sup>2</sup>	39%	49%	33%	
>30 mL/min/1.73m <sup>2</sup>	48%	25.5%	14%	
ASA	50%	58%	51%	0.16
ACEi	50%	40%	46%	0.05
ARB	38%	37%	43%	0.36
ACEi+ARB	78%	69%	75%	0.03
Beta Blocker	39%	59%	42%	<0.001
Statin	69%	82%	64%	<0.001
Albumin g/L	41±4	39±5	39±5	<0.001
Hemoglobin g/L	125±16	118±16	119±16	<0.001
Cholesterol mmol/L	4.29±1.19	4.00±1.15	4.29±1.59	0.09
HDL mmol/L	1.19±0.52	1.08±0.33	1.11±0.39	0.03
LDL mmol/L	2.26±0.96	2.07±0.75	2.08±0.90	0.03
Triglycerides mmol/L	2.02±1.37	1.94±1.32	2.23±1.92	0.18

Calcium mmol/L	2.32±0.13	2.29±0.15	2.25±0.14	<0.001
Phosphate mmol/L	1.18±0.24	1.24±0.24	1.33±0.25	<0.001
1,84 Parathyroid Hormone pg/mL	40 [24-67]	57 [35-88]	64 [37-110]	<0.001
Bicarbonate mmol/L	25±3	26±3	24±4	<0.001
Sodium mmol/L	140±6	140±3	140±9	0.94
Urea mmol/L	15±6	19±7	20±7	<0.001
ACR mg/mmol	18 [4-70]	27 [5-98]	116 [34-317]	<0.001
< 3.4 mg/mmol	21%	19%	5%	
3.4-33.9 mg/mmol	41%	34%	20%	<0.001
34.0-113.0 mg/mmol	19%	23%	24%	
> 113.0 mg/mmol	19%	24%	51%	
Cystatin C ng/mL	1753±469	2186±515	2214±528	<0.001
ADMA µM	0.526±0.090	0.595±0.189	0.550±0.108	<0.001
NT-pro-BNP pg/mL	291 [121-702]	1199 [542-3251]	441 [197-1227]	<0.001
CRP mg/L	2.4 [1-5.8]	3.9 [1.5-8.1]	2.7 [1-6.5]	<0.001
TGF β1 pg/mL	20,408 [16,134-25,157]	19,003 [14,550-24,898]	19,343 [15,290-23,918]	0.03
FGF-23 RU/mL	206 [143-346]	330 [201-572]	353 [223-603]	<0.001
IL6 µg/L	4.03 [1-6.43]	5.92 [3.65-9.32]	4.38 [1-6.92]	<0.001
Troponin I > LLD	28%	57%	32%	<0.001
25-hydroxyvitamin D ng/mL	26±14	24±13	23±14	0.002

**Figure S2:** All cause and cardiovascular mortality before dialysis commencement by etiological group



**Figure S3:** Hazard ratio for death before dialysis commencement by etiological groups



Adjusted 1, for kidney function factors: age, gender, history of cardiovascular disease, eGFR, ACR

Adjusted 2, for major significant traditional risk factors: age, gender, history of cardiovascular disease, eGFR, diastolic blood pressure, albumin, hemoglobin, parathyroid hormone

**Table S2. Subgroup analysis: Patients with no cardiovascular comorbidities at baseline – multivariate\* hazard ratios (95% confidence intervals) of traditional risk factors and novel biomarkers for mortality by CKD etiological groups**

Variable	DKD	GN	PCK/TIN
Age (per 5 years)	1.50 (1.19 - 1.89)	1.43 (1.05 - 1.94)	1.66 (1.13 - 2.42)
Gender (Male vs. Female)	1.24 (0.52 - 2.97)	4.93 (0.97 – 25.13)	0.09 (0.01 - 0.57)
eGFR (per 1 mL/min/1.73m <sup>2</sup> )	0.99 (0.94 - 1.05)	1.09 (0.99 - 1.20)	0.99 (0.91 - 1.08)
uACR (per 1 ln of mg/mmol)	0.75 (0.61 - 0.95)		2.02 (1.28 – 3.19)
Diastolic BP (per 1 mmHg)			0.87 (0.81 - 0.94)
Albumin (per 1 g/L)	0.88 (0.80 - 0.97)		0.83 (0.71 – 0.96)
Phosphate (per 0.1 mmol/L)		1.14 (0.78 - 1.66)**	
ADMA (per 1 SD, µM)	1.61 (1.04 - 2.49)		1.85 (1.42 - 2.41)
NT-pro-BNP (per 1SD ln of pg/mL)	2.06 (1.25 - 3.38)	3.88 (1.45 - 10.40)	
TGF β1 (per 1SD ln of pg/mL)		0.41 (0.19 - 0.84)	
FGF-23 (per 1SD ln of RU/mL)		2.63 (1.13 - 6.09)	
IL6 (per 1SD ln of µg/L)			3.00 (1.42 - 6.34)

\*All models include age, gender and baseline eGFR and statistically significant traditional risk factors.

\*\* In the GN model that includes only traditional risk factors, phosphate HR for mortality is 1.37 per 0.1 mmol/L [95% CI: 1.01-1.86, P=0.04]