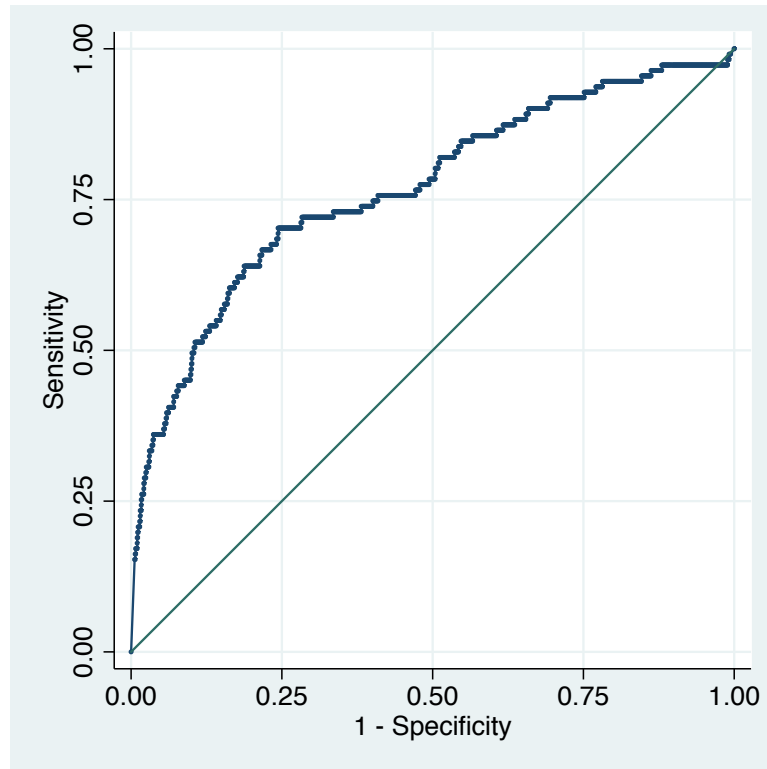**Figure S1:** Receiver-operating characteristic curve for urinary YKL-40 for detecting acute kidney injury

Area under the curve (AUC) for YKL-40 is 0.77 with 70.3% sensitivity and 75.6% specificity at an optimal cutoff value of 3.85 ng/mL.

Table S1: Donor YKL-40 concentrations, stratified by discard

Biomarker	ALL (N=3108)	No Discard (N=2435)	Discard (N=673)	P-value
Urinary YKL-40 (ng/mL)	1.41 [0.39, 5.79]	1.13 [0.34, 4.46]	2.42 [0.71, 13.06]	<0.001

Table S2: Association of donor YKL-40 and discard

Tertile (Range [ng/ml])	N	Rate of Discard (%)	Relative Risk (95% CI) for Discard	
			Unadjusted	Adjusted [1]
T1 (<0.61)	n_1=1028	152 (15%)	1.0 (referent)	1.0 (referent)
T2 (0.61–3.31)	n_2=1044	216 (21%)	1.40 (1.10, 1.78)	1.17 (0.96, 1.43)
T3 (3.33–432.78)	n_3=1036	305 (29%)	1.99 (1.59, 2.49)	1.28 (1.05, 1.55)

[1] Donor variables used for adjustment: age (years), height (cm), weight (kg), black race, history of hypertension, history of diabetes, terminal serum creatinine, stroke as cause of death, and donation after circulatory determination of death status.

Table S3: Donor YKL-40 concentrations, stratified by ATN severity

Biomarker	ALL (N=1083)	Absent (N=810)	Mild (N=188)	Moderate / Severe[1] (N=85)	P-value
Urinary YKL-40 (ng/mL)	2.37 [0.69, 13.61]	2.33 [0.69, 11.44]	3.27 [0.68, 12.97]	5.35 [0.86, 33.66]	0.048

Severity of ATN was classified as mild, moderate, or severe if the tubular involvement was reported as <25%, 25%-50%, or >50%, respectively.

[1]Only one biopsy was classified as severe

Table S4: Association of donor YKL-40 with risk of recipient DGF, stratified by trends in creatinine (Peak creatinine similar to terminal creatinine was considered <0.2 mg/dL)

Tertile of YKL-40 (Range [ng/ml])	N	Rate of DGF (%)	Relative Risk (95% CI)			
			Unadjusted	Adjusted for donor variables [1]	Adjusted for donor, transport & recipient variables [2]	Adjusted for donor, transport, recipient variables & donor NGAL [3]
Downward Trend in Peak to Terminal Creatinine						
T1 (<0.61)	n_1=491	138 (28%)	1.0 (referent)	1.0 (referent)	1.0 (referent)	1.0 (referent)
T2 (0.61–3.31)	n_2=408	126 (31%)	1.10 (0.88, 1.38)	0.96 (0.78, 1.18)	0.94 (0.76, 1.15)	0.89 (0.72, 1.10)
T3 (3.33–432.78)	n_3=315	95 (30%)	1.08 (0.85, 1.38)	0.91 (0.72, 1.14)	0.78 (0.62, 0.99)	0.69 (0.52, 0.91)
Peak Creatinine Similar to Terminal Creatinine						
T1 (<0.61)	n_1=385	118 (31%)	1.0 (referent)	1.0 (referent)	1.0 (referent)	1.0 (referent)
T2 (0.61–3.31)	n_2=420	114 (27%)	0.89 (0.70, 1.13)	0.89 (0.71, 1.10)	0.88 (0.71, 1.10)	0.84 (0.68, 1.05)
T3 (3.33–432.78)	n_3=416	165 (40%)	1.30 (1.05, 1.60)	1.01 (0.82, 1.25)	1.01 (0.82, 1.25)	0.84 (0.66, 1.09)

Table S5: Association of donor YKL-40 with 6-month eGFR, stratified DGF status (graft failure imputed as 0 ml/min/1.73m^2 for the 97 recipients who experienced graft failure prior to 6 months)

Tertile of YKL-40 (Range [ng/ml])	N	Unadjusted	Adjusted for donor variables [1]	Adjusted for donor, transport & recipient variables [2]	Adjusted for donor, transport, recipient variables & donor NGAL [3]
Recipients without DGF					
T1 (<0.61) (referent)	n_1=620	61.94 (59.79 to 64.09)	54.58 (51.45 to 57.70)	55.93 (53.39 to 59.47)	55.38 (51.78 to 58.99)
T2 (0.61–3.31)	n_2=588	-2.31 (-5.26 to 0.64)	-0.14 (-2.69 to 2.41)	0.50 (-2.06 to 3.05)	1.15 (-1.50 to 3.79)
T3 (3.33–432.78)	n_3=471	-5.66 (-8.76 to -2.56)	-2.27 (-5.15 to 0.62)	-1.67 (-4.56 to 1.22)	-0.02 (-3.53 to 3.50)
Recipients with DGF					
T1 (<0.61) (referent)	n_1=256	45.11 (41.83 to 48.39)	39.98 (35.94 to 44.03)	38.67 (33.78 to 43.56)	38.26 (33.20 to 43.32)
T2 (0.61–3.31)	n_2=240	-0.19 (-5.03 to 4.65)	3.00 (-1.43 to 7.43)	3.18 (-1.24 to 7.61)	3.52 (-1.04 to 8.07)
T3 (3.33–432.78)	n_3=260	3.73 (-0.79 to 8.25)	5.51 (1.14 to 9.88)	6.14 (1.72 to 10.57)	7.18 (1.53 to 12.82)

Values are estimated mean eGFR (95% CI) for referent tertile (T1), and estimated mean difference (95% CI) for the other tertiles (T2 and T3).

[1] Donor variables used for adjustment: age (years), height (cm), weight (kg), black race, history of hypertension, history of diabetes, terminal serum creatinine, stroke as cause of death, and donation after circulatory determination of death status.

[2] Includes all variables listed above plus the following transport and recipient variables: cold ischemia time (hours), age (years), black race, gender, previous kidney transplant, diabetes as the cause of end stage renal disease, number of human leukocyte antigen mismatches, body mass index (kg/m^2), duration of dialysis before transplant (months), and panel reactive antibody (%).

[3] Includes all variables listed above plus log base 2-transformed donor urine NGAL.

Table S6: Association of donor YKL-40 with 6-month eGFR, stratified DGF status (death imputed as 0 ml/min/1.73m^2 for the 54 recipients who died prior to 6 months)

Tertile of YKL-40 (Range [ng/ml])	N	Unadjusted	Adjusted for donor variables [1]	Adjusted for donor, transport & recipient variables [2]	Adjusted for donor, transport, recipient variables & donor NGAL [3]
Recipients without DGF					
T1 (<0.61) (referent)	n_1=620	60.70 (58.46 to 62.95)	53.55 (50.49 to 56.60)	55.03 (51.54 to 58.53)	54.48 (50.91 to 58.05)
T2 (0.61–3.31)	n_2=588	-1.50 (-4.53 to 1.54)	0.67 (-2.00 to 3.34)	1.32 (-1.35 to 4.00)	1.98 (-0.81 to 4.76)
T3 (3.33–432.78)	n_3=471	-4.62 (-7.80 to -1.43)	-1.13 (-4.11 to 1.85)	-0.55 (-3.55 to 2.45)	1.13 (-2.57 to 4.82)
Recipients with DGF					
T1 (<0.61) (referent)	n_1=256	45.64 (42.48 to 48.80)	41.29 (37.53 to 45.05)	40.60 (36.05 to 45.15)	40.21 (35.47 to 44.94)
T2 (0.61–3.31)	n_2=240	-0.58 (-5.26 to 4.09)	2.41 (-1.83 to 6.65)	2.82 (-1.44 to 7.08)	3.13 (-1.26 to 7.52)
T3 (3.33–432.78)	n_3=260	3.79 (-0.55 to 8.12)	5.36 (1.18 to 9.54)	6.18 (1.92 to 10.43)	7.15 (1.67 to 12.62)

Values are estimated mean eGFR (95% CI) for referent tertile (T1), and estimated mean difference (95% CI) for the other tertiles (T2 and T3).

[1] Donor variables used for adjustment: age (years), height (cm), weight (kg), black race, history of hypertension, history of diabetes, terminal serum creatinine, stroke as cause of death, and donation after circulatory determination of death status.

[2] Includes all variables listed above plus the following transport and recipient variables: cold ischemia time (hours), age (years), black race, gender, previous kidney transplant, diabetes as the cause of end stage renal disease, number of human leukocyte antigen mismatches, body mass index (kg/m^2), duration of dialysis before transplant (months), and panel reactive antibody (%).

[3] Includes all variables listed above plus log base 2-transformed donor urine NGAL.

Table S7: Association of donor YKL-40 with risk of recipient PNF

Tertile of YKL-40 (Range [ng/ml])	N	Rate of PNF (%)	Relative Risk (95% CI)
			Unadjusted
T1 (<0.61)	n_1=876	9 (1%)	1.0 (referent)
T2 (0.61–3.31)	n_2=828	11 (1%)	1.29 (0.49, 3.35)
T3 (3.33–432.78)	n_3=731	13 (2%)	1.73 (0.71, 4.23)