

Table S1. Baseline Characteristics of the ICU Cohort by AKI Status

Characteristic	All patients (n=208)	Incident AKI* (n=40)	No Incident AKI (n=168)
Plasma uric acid, mg/dl	4.7 [3.6 – 6.4]	5.7 [4.1 – 7.8]	4.6 [3.5 – 6.2]
Demographics			
Female, n (%)	94 (45.2)	19 (47.5)	75 (44.6)
Age, years	61.8 ± 15.3	64.4 ± 13.1	61.2 ± 15.7
White, n (%)	177 (85.1)	31 (77.5)	146 (86.9)
Enrollment Characteristics			
SCr, mg/dl	0.8 [0.6 – 1.0]	1.0 [0.8 – 1.2]	0.7 [0.6 – 0.9]
eGFR, ml/min/1.73m ²	91.1 ± 26.6	76.1 ± 28.6	94.7 ± 24.9
APACHE II	17 [12 – 24]	15 [12 – 23]	17 [13 – 25]
Sepsis, n (%)	113 (54.3)	23 (57.5)	90 (53.6)
Etiology, n (%)			
Multifactorial	-	18 (45.0)	-
Ischemic	-	9 (22.5)	-
Pre-renal	-	6 (15.0)	-
Sepsis	-	5 (12.5)	-
Other	-	2 (5.0)	-
Co-morbid Conditions, n (%)			
Active malignancy	84 (40.4)	12 (30.0)	72 (42.9)
Chronic lung disease	49 (23.6)	17 (42.5)	32 (19.1)
Diabetes mellitus	44 (21.2)	13 (32.5)	31 (18.5)
Congestive heart failure	12 (5.8)	5 (12.5)	7 (4.2)
Chronic liver disease	10 (4.8)	3 (7.5)	7 (4.2)
ICU type, n (%)			
Medical	112 (53.9)	17 (42.5)	95 (56.5)
Surgical	96 (46.1)	23 (57.5)	73 (43.5)

Data presented as mean ± standard deviation (SD), or median with interquartile range [IQR] for continuous variables and frequencies for binary variables. Estimated glomerular filtration rate (eGFR) was determined using the Chronic Kidney Disease Epidemiology Collaboration equation.

*KDIGO stage 1 AKI or greater

Table S2. Baseline Characteristics of ATN Study Participants by 60-day Mortality

Characteristics	All participants (n=250)	60-day mortality (n=125)	No 60-day mortality (n=125)
Plasma uric acid, mg/dl	11.1 [8.6 – 14.2]	11.1 [8.3 – 14.2]	11.1 [9.0 – 13.8]
Demographics			
Female, n (%)	77 (30.8)	39 (31.2)	38 (30.4)
Age, years	62.0 ± 14.6	64.5 ± 13.1	59.4 ± 15.7
White, n (%)	199 (79.6)	97 (77.6)	102 (81.6)
Pre-morbid Characteristics			
SCr, mg/dl	1.1 [0.8 – 1.4]	1.0 [0.8 – 1.3]	1.1 [0.8 – 1.4]
eGFR, ml/min/1.73m ²	69.1 ± 32.8	70.5 ± 31.8	67.7 ± 34.0
Weight, kg	76.4 ± 15.6	76.4 ± 16.5	76.4 ± 14.7
Co-morbid Conditions*, n (%)			
Cardiovascular disease	82 (32.8)	45 (36.0)	37 (29.6)
Diabetes mellitus	72 (28.8)	40 (32.0)	32 (25.6)
Malignancy	50 (20.0)	24 (19.2)	26 (20.8)
Immunocompromised	35 (14.0)	14 (11.2)	21 (16.8)
Cerebrovascular disease	29 (11.6)	17 (13.6)	12 (9.6)
Chronic hypoxemia	25 (10.0)	16 (12.8)	9 (7.2)
Enrollment Characteristics			
BUN prior to RRT, mg/dl	69.5 ± 30.1	68.9 ± 31.4	70.1 ± 28.8
SCr prior to RRT, mg/dl	4.1 [3.0 – 5.6]	3.6 [2.8 – 5.0]	4.7 [3.6 – 6.0]
Mean Arterial Pressure, mmHg	76.0 ± 15.4	73.6 ± 15.6	78.5 ± 14.8
Urine volume, ml/24 hrs	195 [72 – 545]	124 [52 – 410]	280 [127 – 825]
Urine volume, ml/hr	10.9 [4.2 – 26.0]	6.1 [2.3 – 18.2]	15.3 [6.4 – 40.9]
Oliguria, n (%)	189 (75.6)	102 (81.6)	87 (69.6)
Mechanical Ventilation, n (%)	189 (75.6)	106 (84.8)	83 (66.4)
APACHE II	26 [21 – 31]	28 [24 – 33]	23 [20 – 29]
SOFA Cardiovascular, n (%)			
0-2	102 (40.8)	38 (30.4)	64 (51.2)
3-4	148 (59.2)	87 (69.6)	61 (48.8)
Treatment, n (%)			
Intensive	122 (48.8)	61 (48.8)	61 (48.8)
Less-intensive	128 (51.2)	64 (51.2)	64 (51.2)
ICU type, n (%)			
Medical	122 (48.8)	59 (47.2)	63 (50.4)
Surgical	108 (43.2)	53 (42.4)	55 (44.0)
Other	20 (8.0)	13 (10.4)	7 (5.6)
Post-surgical, n (%)	126 (50.4)	63 (50.4)	63 (50.4)
Etiology of AKI, n (%)			
Ischemic	198 (79.2)	94 (75.2)	104 (83.2)
Nephrotoxic	48 (19.2)	17 (13.6)	31 (24.8)
Sepsis	132 (52.8)	70 (56.0)	62 (49.6)
Multifactorial	135 (54.0)	68 (54.4)	67 (53.6)

Data presented as mean ± SD, or median [IQR] for continuous variables and frequencies for binary or categorical variables. eGFR was determined using the Modification of diet in renal disease (MDRD) equation.

*Cardiovascular disease includes participants with a history of myocardial infarction, angina, or congestive heart failure. Diabetes mellitus includes participants with a history of end organ disease from diabetes, use of diabetic diet, or on diabetic medications. Malignancy includes participants with a history of leukemia and tumors with or without metastasis. Immunocompromised includes participants with a history of human

immunodeficiency virus, acquired immune deficiency syndrome, or on immunosuppressive therapy. Cerebrovascular disease includes participants with a history of transient ischemic attack or stroke.

Table S3. Baseline Characteristics in the ATN Study: Participants not in Subcohort vs Subcohort included in this study

Characteristics	ATN Study Not in Subcohort (n=874)	ATN Study Subcohort (n=250)	P
Demographics			
Female, %	254 (29.1)	77 (30.8)	0.6
Age, years	59.0 ± 15.4	62.0 ± 14.6	0.006
White, %	635 (72.7)	199 (79.6)	0.03
Pre-morbid Characteristics			
SCr, mg/dl	1.1 [0.9 – 1.4]	1.1 [0.8 – 1.4]	0.9
eGFR, ml/min/1.73m ²	72.1 ± 41.5	69.1 ± 32.8	0.3
Co-morbid Conditions, %			
Cardiovascular disease	327 (37.4)	82 (32.8)	0.2
Diabetes mellitus	251 (28.7)	72 (28.8)	0.9
Malignancy	174 (19.9)	50 (20.0)	0.8
Immunocompromised	143 (16.4)	35 (14.0)	0.4
Cerebrovascular disease	93 (10.6)	29 (11.6)	0.6
Chronic hypoxemia	82 (9.4)	25 (10.0)	0.6
Enrollment Characteristics			
BUN prior to RRT, mg/dl	58.0 ± 30.0	69.5 ± 30.1	<0.001
SCr prior to RRT, mg/dl	3.4 [2.5 – 4.6]	4.1 [3.0 – 5.6]	<0.001
Urine volume, ml/24 hrs	180 [50 – 405]	195 [72 – 545]	0.01
Oliguria, %	686 (78.4)	189 (75.6)	0.3
Mechanical Ventilation, %	715 (81.8)	189 (75.6)	0.02
APACHE II	26 [21 – 32]	26 [21 – 31]	0.8
SOFA Cardiovascular, %			0.1
0-2	407 (46.6)	102 (40.8)	
3-4	467 (53.6)	148 (59.2)	
Treatment, %			0.6
Intensive	441 (50.5)	122 (48.8)	
Less-intensive	433 (49.5)	128 (51.2)	
60-day mortality, %	466 (53.3)	125 (50.0)	0.4

Table S4. Unadjusted Predictors of Uric Acid in the ATN Study Cohort

Variable	Δ Uric Acid, mg/dl	95% CI	P
Age, per year	-0.05	-0.09, -0.007	0.02
Female	-0.54	-1.81, 0.73	0.4
eGFR (pre-morbid) per 1 ml/min	-0.005	-0.02, 0.01	0.6
SCr (pre-morbid) per 1 mg/dl	0.84	-0.88, 2.55	0.3
SCr (enrollment) per 1 mg/dl	0.65	0.35, 0.96	<0.001
Δ SCr per 1 mg/dl	0.60	0.26, 0.94	<0.001
Admit BUN per 1 mg/dl	0.05	0.03, 0.07	<0.001
Recent BUN per 1 mg/dl	0.04	0.02, 0.05	<0.001
Δ BUN per 1 mg/dl	-0.001	-0.02, 0.02	0.9
Race: Non-white vs White	0.12	-1.34, 1.57	0.9
Diabetes mellitus	0.69	-0.63, 2.02	0.3
Natural log urine volume (mL)/24hr	0.004	-0.33, 0.34	0.9
Randomization arm (high vs less intense)	-0.13	-1.30, 1.05	0.8
APACHE II, per 1 point	0.02	-0.07, 0.10	0.7
SOFA (3-4 vs 0-2)	-0.25	-1.45, 0.95	0.7
Mechanical ventilation	-0.07	-1.44, 1.30	0.9