Supplemental material

Table 1. Logistic regression model for propensity score for PRE-EMPTIVE RRT among patients with PRE-EMPTIVE RRT (n=105) and without RRT (n=2450).

	Odds ratio (95% confidence interval)	P-value
Male sex	0.99 (0.60-1.62)	0.96
Chronic kidney disease[a]	1.86 (0.88-3.95)	0.11
APACHE II main diagnosis group	-	0.23
Source of admission	-	0.02
Received diuretics prior to ICU admission[b]	1.42 (0.87-2.32)	0.16
Presence of severe sepsis at ICU admission	1.20 (0.70-2.06)	0.51
Cumulative urine output within first 24h (mL)	1.00 (1.00-1.00)	<0.001
Highest AKI stage prior to RRT or for non-RRT patients within 24h of ICU admission	3.46 (2.76-4.33)	<0.001
First lactate in ICU (mmol/L)[c]	1.03 (0.96-1.10)	0.44
Highest dose of norepinehprine within first 24h (six categories)[d]	1.36 (1.14-1.63)	<0.001

The model included 2546 (99.6%) of 2555 patients.

Hosmer-Lemeshow test 10.236, P=0.249.

AUC for predicting EARLY RRT was 0.92 (95% CI 0.89-0.95).

[a] Glomerular filtration rate prior to critical illness below 60ml/min/1.73m2 (patients with chronic need for dialysis were excluded from the study). Patients with missing data (n=9, 0.4%) were assumed not to have CKD.

[b] Patients with missing data (n=69, 2.7%) were assumed not to have received diuretics.

[c] In 157 (6.1%) no lactate value measured in ICU was available, and the highest value measured prior to ICU admission was used. In 259 (10.1%) the value was missing and was imputed with the median of measured values.

[d] Dose categories: 1) none 2)<0.1 ug/kg/min 3) 0.1-0.2 ug/kg(min 4) 0.2-0.5ug/kg/min 5) 0.5-1.0 ug/kg/min 6) >1.0 ug/kg/min

Table 2. Indications for renal replacement therapy defined by the attending intensivists.

	PRE-EMPTIVE	CLASSIC	P	CLASSIC-URGENT	CLASSIC-DELAYED	P
Median number of indications	2 [2-3]	3 [2-4]	<0.001	3 [3-4]	3 [2-4]	0.57
Hyperkalemia	8/99 (8.1)	49/124 (39.5)	<0.001	40/82 (48.8)	9/42 (21.4)	0.004
Acidosis	51/101 (50.5)	100/129 (77.5)	<0.001	74/85 (87.1)	26/44 (59.1)	0.001
High creatinine	68/103 (66.0)	97/126 (77.0)	0.07	68/83 (81.9)	29/43 (67.4)	0.08
Fluid overload	47/100 (47.0)	50/124 (40.3)	0.34	20/82 (24.4)	30/42 (71.4)	<0.001
Oliguria	80/105 (76.2)	111/128 (86.7)	0.04	71/87 (81.6)	40/41 (97.6)	0.01
Rhabdomyolysis	20/97 (20.6)	8/114 (7.0)	0.004	5/75 (6.7)	3/39 (7.7)	1.0
Else	4/97 (4.1)	6/116 (5.2)	0.76	6/75 (8.0)	0/41 (0.0)	0.09

Data expressed as median [interquartile range] or number/total number (percentage).

Table 3. Matched patients with PRE-EMPTIVE RRT compared to those with PRE-EMPTIVE RRT left without a match.

	Matched PRE-EMPTIVE RRT n=67	Non-matched PRE-EMPTIVE RRT n=38	P
Age	64.0 [56.0-76.0]	60.5 [40.0-70.3]	0.07
Male sex	44/67 (65.7)	25/38 (65.8)	1.0
Chronic kidney disease	10/66 (15.2)	3/38 (7.9)	0.37
Number of pre-existing chronic illnesses	1 [0-2]	1 [0-2]	0.21
Operative admission	33/67 (49.3)	19/38 (50.0)	1.0
Emergency admission	56/67 (83.6)	34/38 (89.5)	0.56
Admitted from			*0.16*
Operating room or recovery room	32/67 (47.8)	20/38 (52.6)	
Emergency room	14/67 (20.9)	12/38 (31.6)	
Ward	15/67 (22.4)	6/38 (15.8)	
Other	6/67 (9.0)	0/38 (0.0)	
SAPS II score	45.0 [35.0-59.0]	50.0 [37.5-64.3]	0.27
SAPS II score without age points	35.0 [25.0-46.0]	39.5 [31.8-51.3]	0.06
SOFA score, first 24h	10.0 [8.0-13.0]	12.0 [8.0-13.3]	0.16
SOFA score, maximum	12.0 [9.0-14.0]	13.0 [10.0-15.3]	0.19
Mechanical ventilation (ICU stay)	58/67 (86.6)	33/38 (86.8)	1.0
Vasoactive drugs (ICU stay)	60/67 (89.6)	32/38 (84.2)	0.54
Severe sepsis until day 5	31/67 (46.3)	17/38 (44.7)	1.0
AKI prior to RRT	55/67 (82.1)	37/37 (100.0)	0.01
Highest AKI stage prior to RRT			*<0.001*

-stage 1	15/55 (27.3)	4/37 (10.8)	
-stage 2	21/55 (38.2)	8/37 (21.6)	
-stage 3	19/55 (34.5)	25/37 (67.6)	
Time from hospital admission to RRT (days)	3.0 [1.0-5.0]	1.0 [1.0-2.3]	0.001
Time from ICU admission to RRT (hours)	25.2 [11.0-47.3]	21.3 [6.6-42.2]	0.39
CRRT as initial modality	50/67 (74.6)	30/38 (78.9)	0.81
At RRT initiation			
K (mEq/L)	4.1 [3.9-4.6]	4.6 [4.2-5.0]	0.01
pH	7.35 [7.28-7.41]	7.34 [7.27-7.39]	0.54
BE (mmol/L)	-5.1 [-9.3- -2.3]	-7.3 [-10.3- -3.9]	0.17
Lactate (mmol/L)	1.9 [1.1-3.5]	1.8 [1.3-4.2]	0.52
Creatinine prior to RRT (mg/dL)	2.4 [1.5-3.3]	3.1 [2.6-4.9]	0.01
Urea (mmol/L)	16.8 [10.9-25.3]	22.2 [14.4-26.1]	0.05
Urine output mL/24h[b]	460 [111-1332]	275 [99-516]	0.08
Fluid accumulation %	4.9 [0.3-10.6]	5.2 [1.9-11.0]	0.45
Diuretics prior to RRT	53/67 (79.1)	26/38 (68.4)	0.25

Data expressed as median [interquartile range] or number/total number (percentage).

[a] Comparison across groups

[b] on the day of RRT initiation

AKI; acute kidney injury, CRRT; continuous renal replacement therapy, ICU; intensive care unit, RRT; renal replacement therapy, SAPS; Simplified Acute Physiology Score, SOFA; Sequential Organ Failure Assessment