Severe Acute Kidney Disease Is Associated With Worse Kidney Outcome Among Acute Kidney Injury Patients

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List of Supplementary Material

Figure S1. Algorithm for the definition of acute kidney injury

Table S1. Characteristics of lower baseline eGFR patients with different AKD stages

Table S2. Characteristics of higher baseline eGFR patients with different AKD stages

Table S3. Association between AKD stage and major adverse kidney events among lower baseline eGFR patients

Table S4. Association between AKD stage and major adverse kidney events among higher baseline eGFR patients

Supplement Figures Legends

Figure S1. Algorithm for the definition of acute kidney injury (AKI), modified from the 2014 NHS England "algorithm for detecting acute kidney injury (AKI) based on serum creatinine changes with time. SCr, serum creatinine; RV, reference value. Only patients with AKI stage 1-3 by this algorithm were defined as AKI patients and included for further analysis. Conversion factors for serum creatinine in mg/dL to μmol/L, ×88.4.

Figure S1. Algorithm for the definition of acute kidney injury
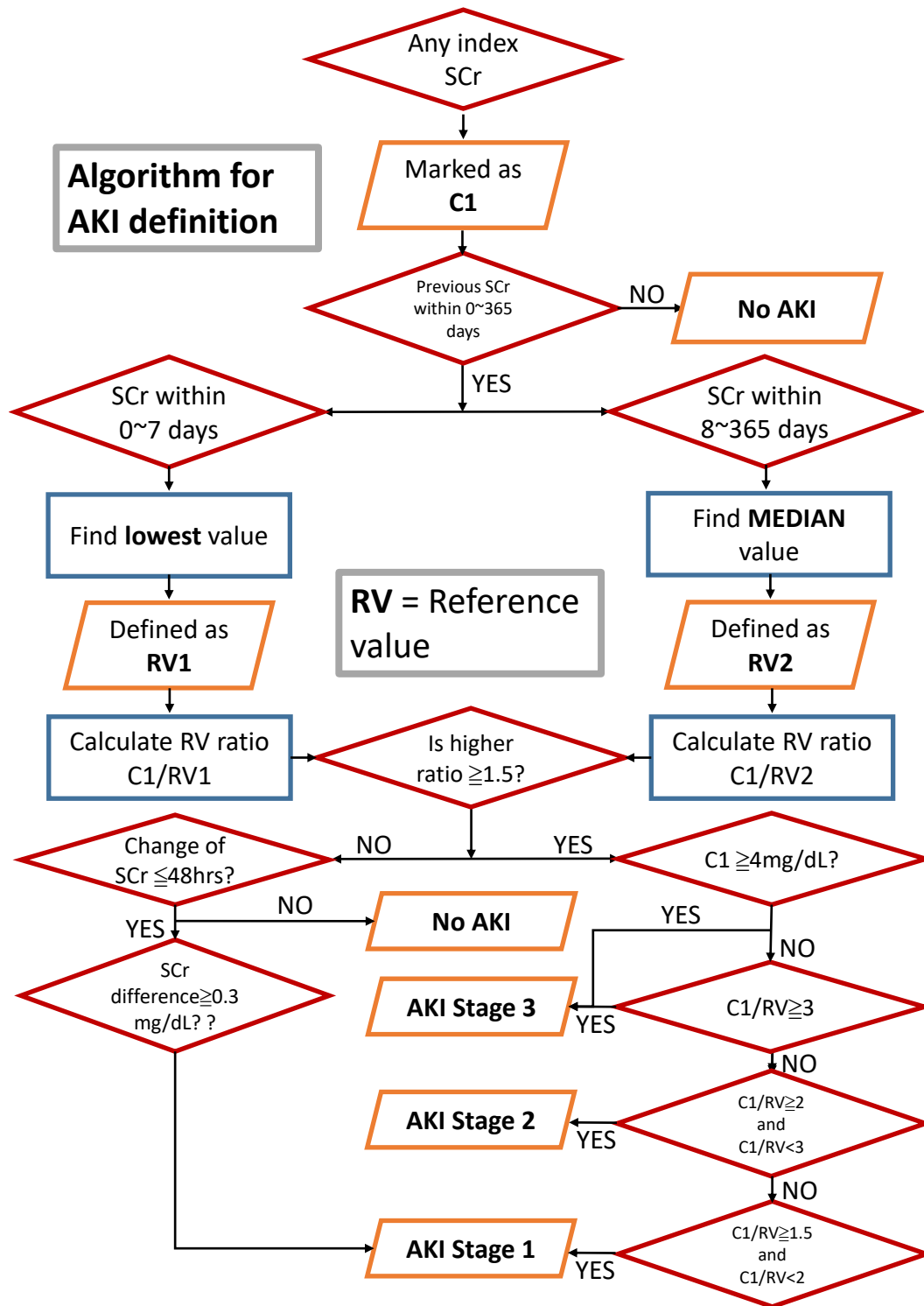
Table S1. Characteristics of lower baseline eGFR patients with different AKD stages

	Lower baseline eGFR				
	AKI				
	AKD stage 0	AKD stage 1	AKD stage 2	AKD stage 3	P value
N	957	313	236	544	
Age, y, mean ± SD	74.9 ± 13.1	76.2 ± 12.6	76.8 ± 13.1	72.1 ± 14.9	<0.001*
Age group, y, N (%)					0.003*
20-29	6 (0.6)	0 (0.0)	0 (0.0)	5 (0.9)	
30-39	10 (1.0)	3 (0.9)	1 (0.4)	15 (2.8)	
40-49	26 (2.7)	9 (2.9)	10 (4.2)	23 (4.2)	
50-59	71 (7.4)	21 (6.7)	16 (6.8)	55 (10.1)	
60-69	179 (18.7)	50 (16.0)	40 (16.9)	106 (19.5)	
70-79	267 (27.9)	89 (28.4)	46 (19.5)	138 (25.4)	
≥80	398 (41.6)	141 (45.0)	123 (52.1)	202 (37.1)	
Male sex, N (%)	502 (52.5)	174 (55.6)	114 (48.3)	299 (55.0)	0.275
Creatinine, mean ± SD	2.3 ± 1.9	2.1 ± 1.5	1.9 ± 1.4	2.8 ± 1.8	<0.001*

Baseline eGFR, N (%)					<0.001*
eGFR 30~59ml/min/1.73m^2	590 (61.7)	212 (67.7)	178 (75.4)	233 (42.8)	
eGFR 15~29 ml/min/1.73m^2	209 (21.8)	62 (19.8)	40 (16.9)	173 (31.8)	
eGFR < 15ml/min/1.73m^2	158 (16.5)	39 (12.5)	18 (7.6)	138 (25.4)	
Comorbidities before the index date, N (%)					
Hypertension	449 (46.9)	145 (46.3)	97 (41.1)	273 (50.2)	0.135
Heart disease	466 (48.7)	145 (46.3)	102 (43.2)	262 (48.2)	0.467
Diabetes mellitus	405 (42.3)	135 (43.1)	79 (33.5)	245 (45.0)	0.026*
Anemia	127 (13.3)	28 (8.9)	23 (9.7)	93 (17.1)	0.002*
Cerebrovascular disease	233 (24.3)	84 (26.8)	69 (29.2)	120 (22.1)	0.139
Malignancy	142 (14.8)	50 (16.0)	39 (16.5)	96 (17.6)	0.550
COPD	104 (10.9)	39 (12.5)	33 (14.0)	61 (11.2)	0.549
Digestive tract disease	504 (52.7)	166 (53.0)	125 (53.0)	284 (52.2)	0.995
Blood electrolytes					
Sodium, mEq/L, mean ± SD	137.9 ± 8.3	138.4 ± 8.1	138.4 ± 8.0	138.0 ± 8.6	0.738

Potassium, mEq/L, mean ± SD	4.3 ± 1.0	4.3 ± 0.9	4.2 ± 0.9	4.4 ± 0.9	0.048*

*P<0.05

SD: standard deviation; CKD: Chronic kidney disease; AKI: Acute kidney injury; AKD: Acute kidney disease; COPD: Chronic obstructive pulmonary disease

Table S2. Characteristics of higher baseline eGFR patients with different AKD stages

| | Higher baseline eGFR | | | | |
| | AKI | | | | |
	AKD stage 0	AKD stage 1	AKD stage 2	AKD stage 3	P value
N	1330	499	414	448	
Age, y, mean ± SD	65.7 ± 15.3	64.6 ± 15.2	65.6 ± 14.5	64.7 ± 16.2	0.394
Age group, y, N (%)					0.218
20-29	20 (1.5)	6 (1.2)	2 (0.5)	13 (2.9)	
30-39	50 (3.8)	23 (4.6)	10 (2.4)	16 (3.6)	
40-49	136 (10.2)	50 (10.0)	43 (10.4)	50 (11.2)	
50-59	241 (18.1)	106 (21.2)	93 (22.5)	88 (19.6)	
60-69	314 (23.6)	131 (26.3)	97 (23.4)	96 (21.4)	
70-79	288 (21.7)	88 (17.6)	86 (20.8)	90 (20.1)	
≥80	281 (21.1)	95 (19.0)	83 (20.0)	95 (21.2)	
Male sex, N (%)	765 (57.5)	267 (53.5)	228 (55.1)	255 (56.9)	0.439
Creatinine, mean ± SD	0.8 ± 0.2	0.7 ± 0.2	0.8 ± 0.2	0.8 ± 0.2	<0.001*

Comorbidities before the index date, N (%)

Hypertension	400 (30.1)	142 (28.5)	113 (27.3)	104 (23.2)	0.046*
Heart disease	345 (25.9)	127 (25.5)	82 (19.8)	105 (23.4)	0.074
Diabetes mellitus	337 (25.3)	123 (24.6)	116 (28.0)	117 (26.1)	0.664
Anemia	71 (5.3)	35 (7.0)	27 (6.5)	46 (10.3)	0.004*
Cerebrovascular disease	323 (24.3)	99 (19.8)	88 (21.3)	74 (16.5)	0.004*
Malignancy	415 (31.2)	218 (43.7)	180 (43.5)	160 (35.7)	<0.001*
COPD	163 (12.3)	53 (10.6)	43 (10.4)	35 (7.8)	0.070
Digestive tract disease	728 (54.7)	246 (49.3)	230 (55.6)	240 (53.6)	0.169
Blood electrolytes					
Sodium, mEq/L, mean ± SD	137.3 ± 7.7	137.3 ± 6.7	137.1 ± 8.4	136.9 ± 8.9	0.856
Potassium, mEq/L, mean ± SD	3.9 ± 0.8	3.9 ± 0.8	3.9 ± 0.8	4.0 ± 0.9	0.190

*$P<0.05$

SD: standard deviation; CKD: Chronic kidney disease; AKI: Acute kidney injury; AKD: Acute kidney disease; COPD: Chronic obstructive pulmonary disease

Table S3. Association between AKD stage and major adverse kidney events among lower baseline eGFR patients

AKD stages	eGFR decline Adjusted regression			KRT Adjusted regression			In-hospital mortality Adjusted regression			Prolonged dialysis Adjusted regression		
	No of Events	Coefficient	95% CI	No of Events	Coefficient	95% CI	No of Events	Coefficient	95% CI	No of Events	Coefficient	95% CI
AKD 0	79	1.00	Reference	160	1.00	Reference	177	1.00	Reference	38	1.00	Reference
AKD 1-3 (pooled)	198	2.53*	1.91-3.35	401	3.29*	2.63-4.11	398	2.64*	2.14-3.27	86	2.16*	1.45-3.23
AKD 1	42	1.82*	1.21-2.73	55	1.21	0.85-1.71	97	1.96*	1.45-2.64	8	0.69	0.35-1.51
AKD 2	32	1.99*	1.27-3.11	53	1.87*	1.29-2.70	90	2.68*	1.95-3.70	6	0.82	0.34-2.00
AKD 3	124	3.18*	2.33-4.35	293	6.27*	4.85-8.10	211	3.12*	2.43-4.00	72	3.48*	2.29-5.31

Adjustment: age, sex, hypertension, heart disease, diabetes, anemia, cerebrovascular disease, cancer, COPD and digestive tract disease.

Abbreviations: AKD, acute kidney disease; eGFR, estimated glomerular filtration rate; KRT, kidney replacement therapy; COPD, chronic obstructive pulmonary disease

*$P < 0.05$

Table S4. Association between AKD stage and major adverse kidney events among higher baseline eGFR patients

AKD stages	eGFR decline Adjusted regression			KRT Adjusted regression			In-hospital mortality Adjusted regression			Prolonged dialysis Adjusted regression		
	No of Events	Coefficient	95% CI	No of Events	Coefficient	95% CI	No of Events	Coefficient	95% CI	No of Events	Coefficient	95% CI
AKD 0	77	1.00	Reference	14	1.00	Reference	199	1.00	Reference	0	NA	
AKD 1-3 (pooled)	190	2.55*	1.92-3.37	128	10.47*	5.97-18.36	567	4.04*	3.33-4.89	6	NA	
AKD 1	66	2.41*	1.70-3.43	2	0.40	0.09-1.78	122	1.72*	1.32-2.23	0	NA	
AKD 2	68	3.14*	2.21-4.47	19	5.05*	2.49-10.25	168	3.74*	2.89-4.83	0	NA	
AKD 3	56	2.18*	1.51-3.16	107	31.43*	17.60-56.11	277	10.48*	8.09-13.57	6	NA	

Adjustment: age, sex, hypertension, heart disease, diabetes, anemia, cerebrovascular disease, cancer, COPD and digestive tract disease.

Abbreviations: AKD, acute kidney disease; eGFR, estimated glomerular filtration rate; KRT, kidney replacement therapy; COPD, chronic obstructive pulmonary disease; NA: not available

*$P < 0.05$