

Detailed Description of Data Source

The Multiparameter Intelligent Monitoring in Intensive Care (MIMIC-II) project includes basic admission and demographic information (not all used in the present study), as well as vital signs, laboratory and radiology results, medications, discharge diagnoses, nursing notes, physician discharge summaries, and dates of death. The MIMIC-II database contains patients from five ICU types: medical ICU (MICU), surgical ICU (SICU), cardiac ICU (CICU), cardiac surgery recovery unit (CSRU), and neonatal ICU (NICU). Other clinical data were added to the database, including pharmacy, provider order entry records, admission and death records, discharge summaries, and 9th Revision (ICD-9) codes.

All data were extracted from the MIMIC-II database (v2.6) and included demographic information (e.g., age, gender) and clinical information from the admission notes, first recorded body weight, laboratory results (e.g., minimum serum bicarbonate, maximum serum potassium, minimum serum sodium, serum creatinine), pharmacy records (e.g., diuretic and alkali administration), cumulative fluid balance (calculated input and output fluids recorded as part of the nursing flow sheet) during the ICU stay, and discharge diagnoses (according to ICD-9 codes). In patients with abnormal CO₂ partial pressure values, standard serum bicarbonate was calculated.¹ Only the laboratory results and fluid balance before RRT initiation were considered. The MIMIC-II database also includes illness severity, as assessed by the simplified acute physiology score (SAPS I) and Sequential Organ Failure Assessment (SOFA) scores ^{2,3}.

References:

1. JORGENSEN K, ASTRUP P. Standard bicarbonate, its clinical significance, and a new method for its determination. *Scand J Clin Lab Invest.* 1957;9:122-132.
2. Le Gall JR, Loirat P, Alperovitch A, et al. A simplified acute physiology score for ICU patients. *Crit Care Med.* 1984;12:975-977.
3. Vincent J-L, De Mendonça A, Cantraine F, et al. Use of the SOFA score to assess the incidence of organ dysfunction/failure in intensive care units: results of a multicenter, prospective study. *Crit Care Med.* 1998;26:1793-1800.

Supplementary Table: Long-term mortality odds ratios according to the acute kidney injury staging in model 1 (adjusted for age, gender, main comorbidities, diagnosis at hospital discharge, sepsis, admission SAPS and SOFA scores, the need for mechanical ventilation, and vasoactive drugs) after adjusting for acute kidney injury complications.

	Model 1	Model 1 + hyperkalemia + metabolic acidosis + cumulative fluid balance
No AKI	Reference	
AKI stage 1	1.188 (1.097-1.286)	1.164 (1.074-1.261)
AKI stage 2	1.428 (1.252-1.628)	1.377 (1.202-1.577)
AKI stage3	1.954 (1.644-2.321)	1.856 (1.551-2.220)

Supplementary Figure: Discriminatory capacity of propensity scoring in predicting the use of renal replacement therapy.

