**Supplementary Table S1. Baseline characteristics of enrolled patients, categorized into non-AKI, stage 1a AKI and stage 1b AKI.**

| Variable | All patients N=49928 | Non-AKI N=40173 | Stage 1a AKI N= 2185 | Stage 1b AKI N = 5474 |
|---|---|---|---|---|
| Age (y) | 65.0(53.0,75.0) | 64.0(52.0,74.0) | 71.0(62.0,79.0) | 70.0(59.0,79.0) |
| Male, n (%) | 26855(53.8) | 20844(51.9) | 1591(72.8) | 3183(58.1) |
| Race, n (%) | | | | |
| White | 35555(71.2) | 28760(71.6) | 1569(71.8) | 3806(69.5) |
| Black | 4573(9.2) | 3721(9.3) | 188(8.6) | 460(8.4) |
| Others | 9800(19.6) | 7692(19.1) | 428(19.6) | 1208(22.1) |
| **Comorbidities, n (%)** | | | | |
| Hypertension | 23188(46.4) | 18798(46.8) | 957(43.8) | 2638(48.2) |
| Diabetes | 12783(25.6) | 9285(23.1) | 856(39.2) | 1871(34.2) |
| Heart failure | 6086(12.2) | 3881(9.7) | 511(23.4) | 1213(22.2) |
| Coronary heart disease | 14988(30.0) | 10604(26.4) | 1125(51.5) | 2471(45.1) |
| Cerebrovascular disease | 4957(9.9) | 3787(9.4) | 236(10.8) | 691(12.6) |
| Chronic pulmonary disease | 10274(20.6) | 7840(19.5) | 467(21.4) | 1409(25.7) |
| Chronic liver disease | 1455(2.9) | 909(2.3) | 64(2.9) | 278(5.1) |
| Tumor | 8543(17.1) | 6939(17.3) | 284(13.0) | 880(16.1) |
| **Kidney function** | | | | |
| Baseline SCr (mg/dL) | 0.7(0.6,0.9) | 0.7(0.6,0.9) | 1.1(0.8,1.4) | 0.8(0.6,1.0) |
| Baseline eGFR (ml/min/1.73m$^2$) | 88.3(65.7,102.1) | 99.4(85.9,110.7) | 69.2(48.1,91.3) | 92.0(71.1,104.5) |
| **Preoperative laboratory test** | | | | |
| WBC ($10^9$/ L) | 7.7(6.0,10.0) | 7.7(6.0,10.0) | 7.5(6.0,9.5) | 7.6(6.0,10.0) |
| Hb (g/dL) | 12.5(10.9,13.8) | 12.6(11.1,13.9) | 12.3(10.7,13.8) | 11.9(10.3,13.4) |
| PLT ($10^9$/ L) | 232.0(183.0,294.0) | 236.0(187.0,297.0) | 212.0(169.0,261.0) | 215.0(168.0,278.0) |
| Alb (g/dL) | 4.0(3.5,4.4) | 4.0(3.6,4.4) | 4.0(3.7,4.4) | 3.9(3.4,4.2) |
| BUN (mg/dL) | 17.0(12.0,23.0) | 16.0(12.0,21.0) | 23.0(17.0,32.0) | 20.0(15.0,29.0) |
| **Acute illness state, n (%)** | | | | |
| Cardiac surgery | 7855(15.7) | 4617(11.5) | 759(34.7) | 2008(36.7) |
| Mechanical ventilation | 3411(6.8) | 1766(4.4) | 177(8.1) | 880(16.1) |

AKI, acute kidney injury; WBC, white blood cell; Hb, hemoglobin; PLT, platelet count; Alb, albumin; BUN, blood urea nitrogen; SCr, serum creatinine; eGFR, estimated glomerular filtration rate; SOFA, sequential organ failure assessment.. Missing value: WBC (8988), Hb (8851), PLT (9009), Alb (24802), BUN (9295).