Supplementary Table 1. Treatment before Admission in Stage I Cohort[a]

	Total (n=317)	No AKI (n=213)	AKI (n=104)	P
Use ACEI/ARB, n (%)[b]	107(33.7)	73(34.2)	34(32.6)	0.780
Drug index of ACEI/ARB[c]	4.1±1.2	4.2±1.2	4.0±1.3	0.332
Use spironolactone, n (%)[b]	113(35.6)	74(34.7)	39(37.5)	0.708
Drug index of spironolactone[c]	1.1±0.2	1.0±0.2	1.1±0.3	0.417
Drug score of RAAS blocker[c]	5.2±1.2	5.2±1.1	5.1±1.4	0.437
Use of diuretic, n (%)[b]	127(40.1)	81(38.0)	46(44.2)	0.290
Use of high-dose diuretic, n (%)[d]	8(2.5)	3(1.5)	5(4.8)	0.120

[a] Continuous variables were expressed as mean ± SD, categorical variables were expressed as a number (%).

[b] Defined as receiving the drugs for more than 4 weeks before admission.

[c] Calculated as previously described (Flanigan MJ, Khairullah QT, Lim VS. Dialysis sodium delivery can alter chronic blood pressure management, *Am J Kidney Dis.* 1997; 29: 383-391).

[d] Defined as daily dose of furosemide >80 mg or the equivalent.

Abbreviations: ACEI, angiotensin converting enzyme inhibitors; ARB, anigotensin II type I receptor blockers. RAAS, renin-angiotensin-aldosterone system.

Supplementary Table 2. Characteristics of Patients on Admission in Stage II Cohort[a]

	Total (n=119)	No AKI (n=82)	AKI (n=37)	P
Demographics variables				
Age, years	67.4±13.6	65.1±13.9	71.7±12.1	0.014
Gender, male, n (%)	72(60.5)	51(62.1)	21(56.8)	0.685
Pre-existing clinical conditions				
Hypertension, n (%)	54(45.4)	30(36.6)	24(64.9)	0.005
Diabetes, n (%)	31(26.1)	15(18.3)	16(43.2)	0.006
CKD, n (%)[b]	24(20.2)	9(10.9)	15(40.5)	0.000
Atrial fibrillation, n (%)	32(26.8)	22(26.8)	10(27.0)	1.000
Prior hospitalization for HF, n (%)	68(57.1)	48(58.5)	20(54.1)	0.692
Primary causes of heart failure				
Ischemic heart disease, n (%)	65(54.6)	45 (54.8)	20(54.1)	1.000
Hypertension, n (%)	19(16.0)	11(13.4)	8(21.6)	0.286
Rheumatic heart disease, n (%)	10(8.4)	8(9.8)	2(5.4)	0.724
Cardiomyopathy, n (%)	17(14.3)	13(15.9)	4(10.8)	0.578
Other, n (%)	8(6.7)	5(6.1)	3(8.1)	0.703
Characteristics on admission				
LVEF<45%, n (%)	58(48.7)	39(47.6)	19(51.4)	0.843
NYHA (class Ⅳ), n (%)	49(41.2)	32(39.0)	17(45.9)	0.548
NT-proBNP, pg/ml	4285(1859-9000)	2933(1250-6774)	7250(4286-14177)	0.001
Systolic BP, mm Hg	129.2±21.7	130.2±21.2	127.0±22.7	0.457
Diastolic BP, mm Hg	76.8±16.6	77.6±17.4	75.2±15.0	0.469
Serum creatinine, μmol/L	118.2±66.2	103.4±49.8	146.1±83.3	0.001
Serum albumin, mmol/L	36.9±4.9	37.8±4.6	35.1±5.2	0.005
Serum triglyceride, mmol/L	1.3±0.6	1.2±0.5	1.3±0.8	0.757
Serum cholesterol, mmol/L	4.1±1.1	4.0±1.0	4.5±1.4	0.062
Hemoglobin, g/L	127.1±22.9	132.1±17.9	117.5±28.2	0.001
UACR, mg/g	90.5(29.5-222.1)	62.2(20.3-175.7)	169.0(66.8-401.5)	0.001
Use of ACEI/ARB, n (%)[c]	29(24.4)	18(22.0)	11(29.7)	0.366
Use of diuretic, n (%)[d]	33(27.7)	20(24.4)	13(35.1)	0.270

[a] Continuous variables were expressed as mean ± SD or median (25th percentile-75th percentile, IQR). Categorical variables were expressed as a number (%).

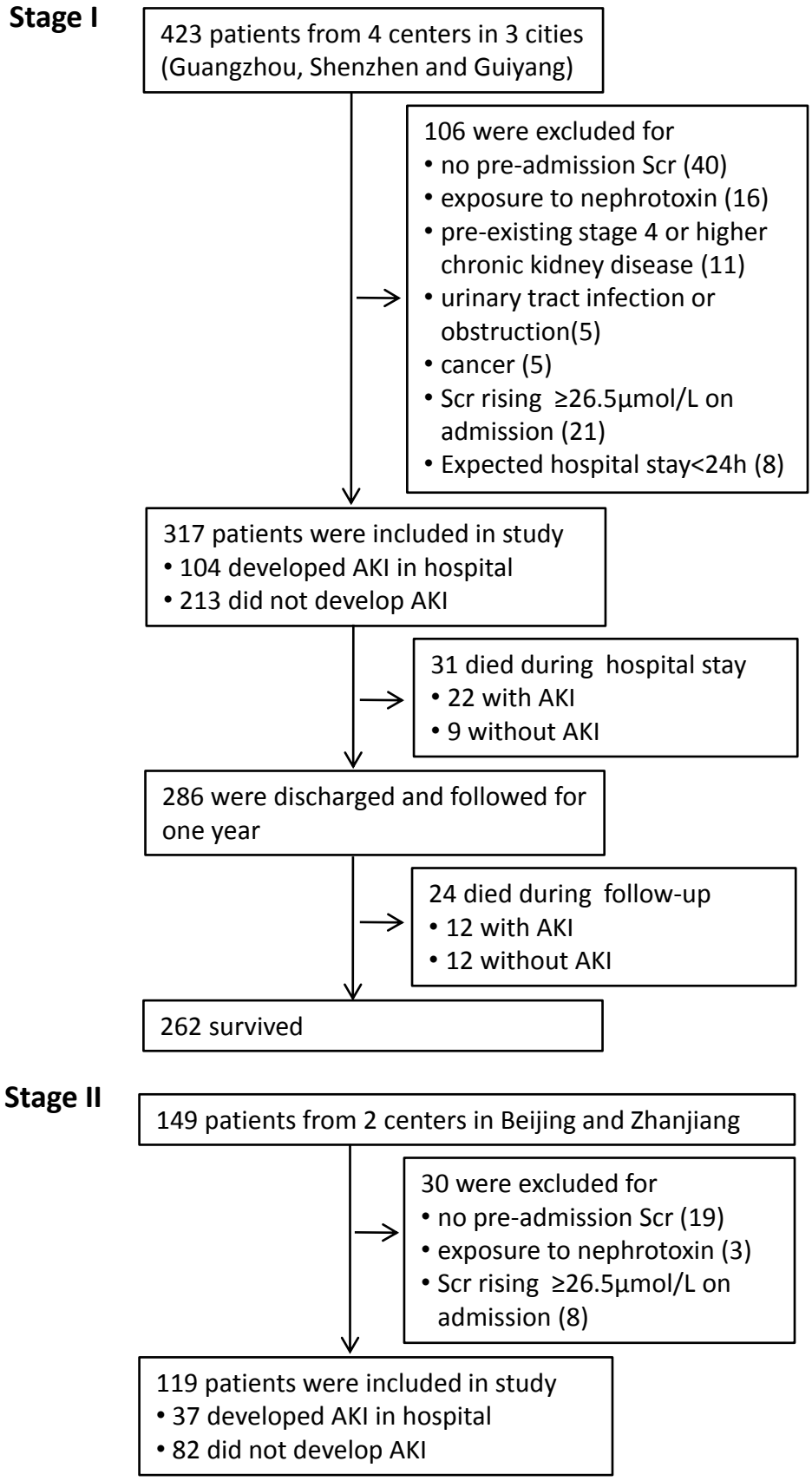
[b] Defined as pre-admission eGFR<60ml/min/1.73m^2. Pre-admission eGFR=the mean of at least 3 measurements over a six-month period before admission.

[c] Defined as receiving ACEI/ARB for more than 4 weeks before admission.

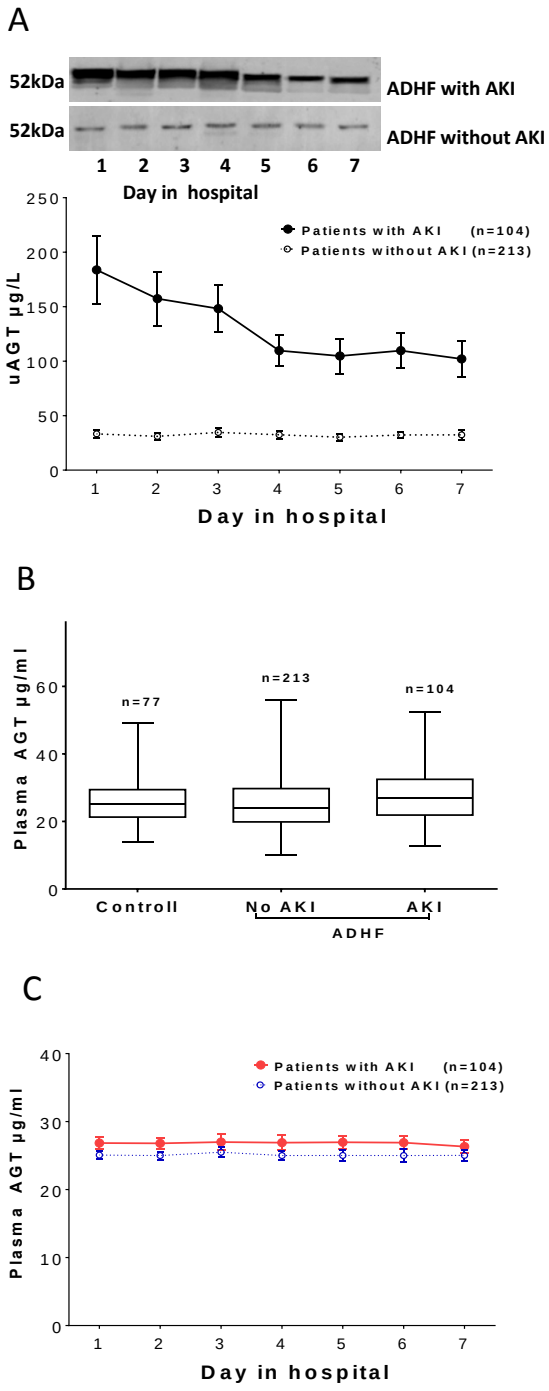
[d] Defined as receiving diuretics for more than 4 weeks before admission.

Abbreviations: CKD, chronic kidney disease; LVEF, left ventricular ejection fraction; NYHA, New York Heart Association; BP, blood pressure; UACR, urine albumin to creatinine ratio; ACEI, angiotensin converting enzyme inhibitors; ARB, anigotensin II type I receptor blockers.

Supplementary Figure 1. Flow Chart of Enrollment and Follow-up of the Study Participants

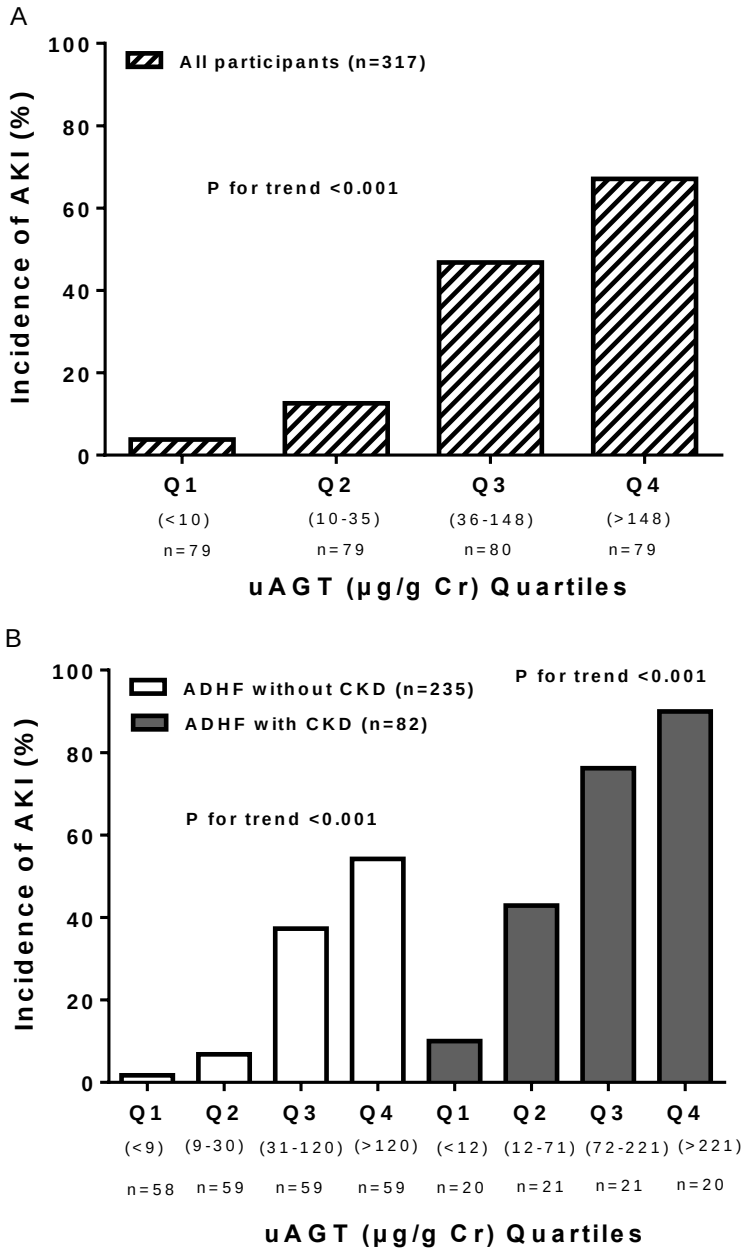


Supplementary Figure 2. Analysis of uAGT and Plasma AGT in Stage I Cohort



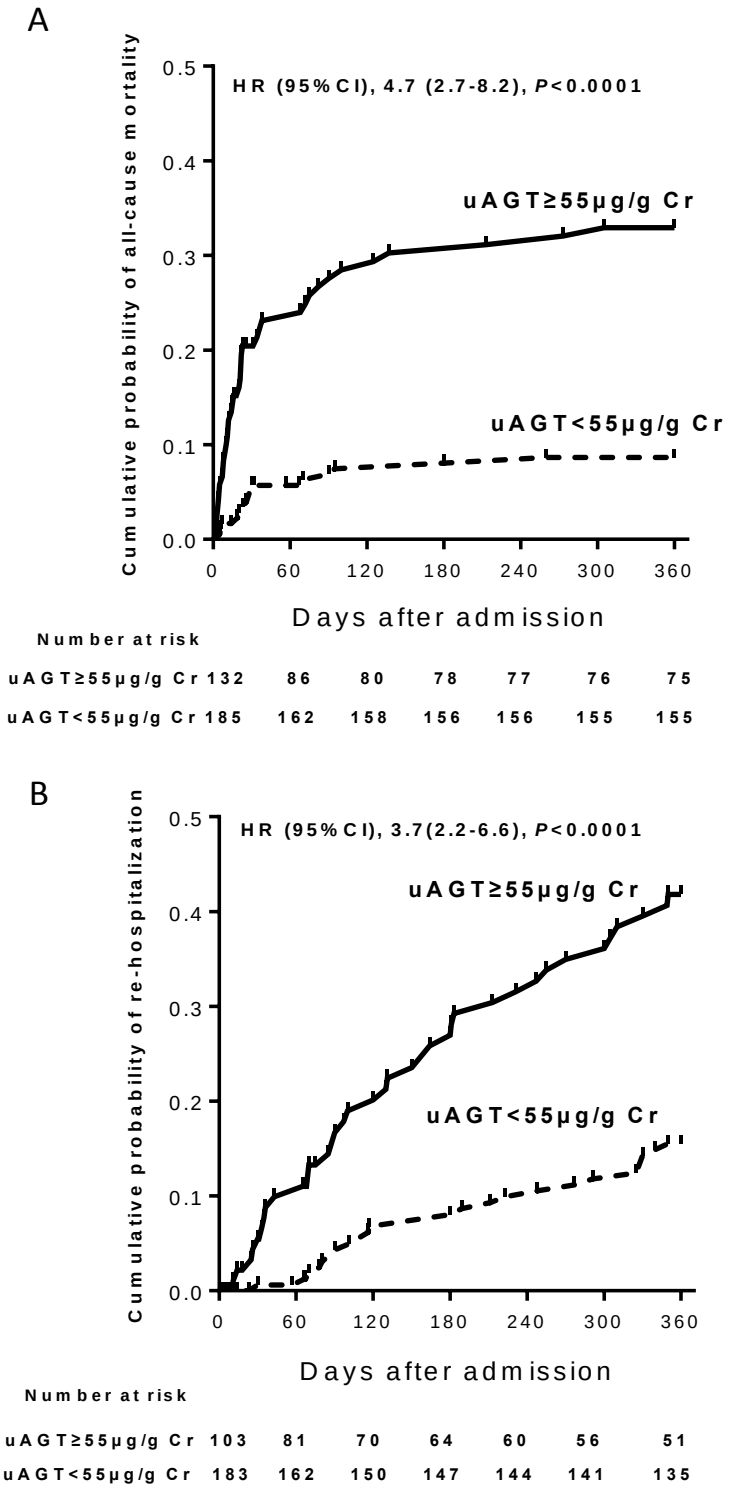
A: Upper graph shows representative western-blot of urine samples obtained at various time points after admission from a patient who subsequently developed AKI and a patient who did not develop AKI. Lower graph shows mean uAGT level at various time points after admission. B: Median of plasma AGT concentration on admission in ADHF patients and healthy volunteers. C: Mean plasma AGT concentration at various time points after admission. Plasma AGT levels were measured by ELISA. Error bars are SE.

Supplementary Figure 3. Association between uAGT Level and Incidence of AKI in Stage I Cohort



A: Quartiles of uAGT on admission and incidence of AKI. B: Quartiles of uAGT on admission and incidence of AKI in patients with and without pre-existing CKD.

Supplementary Figure 4. Kaplan-Meier Analyses for One-Year Prognosis in Stage I Cohort



A: Cumulative probability of all-cause mortality from admission to one year follow-up according to the category of uAGT level. B: Cumulative probability of re-hospitalization from discharge to one year follow-up according to the category of uAGT level.