

SUPPLEMENTAL DATA

Endothelial activation and stress index predicts 28-day mortality in patients undergoing CRRT

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Full article is available at the following link: [Endothelial activation and stress index predicts 28-day mortality in patients undergoing CRRT](#)

Supplemental material 1. Diagnosis of multicollinearity

Variables	VIF1	VIF2
EASIX_log	1.662359	1.659836
Age group	1.222342	1.220264
Gender	1.050467	1.050953
Race	1.201444	1.199489
DBP	1.758875	1.750401
HR	1.296619	1.289909
RR	1.195778	1.193486
SBP	1.725682	1.718897
Alb	1.326155	1.320762
AST	5.283788	1.571968
ALT	4.926456	-
Ca	1.328476	1.3225
K	1.142591	1.140499
Lac	1.439592	1.436421
Na	1.150148	1.148243
P	1.346312	1.346945
PO2	1.190125	1.18975
PT	1.339843	1.334596
RBC	1.283325	1.272575
Tbil	1.566029	1.563825
WBC	1.058178	1.054487
DM	1.108366	1.107702
HBP	1.077503	1.074539
MLD	1.405071	1.405322
CHF	1.370762	1.361878
Statins	1.389195	1.384325
Norepinephrine	1.78347	1.783873
MV	1.816874	1.815669
gcs	1.088157	1.08616
sofa	1.613622	1.607254

VIF1 represents the variance inflation factors from the multicollinearity analysis including all variables, whereas VIF2 represents the results after ALT was removed from the model. Abbreviation: VIF: Variance inflation factor.

Supplemental material 2.

Diagnosis of strongly influencing points based on DFBETA statistics

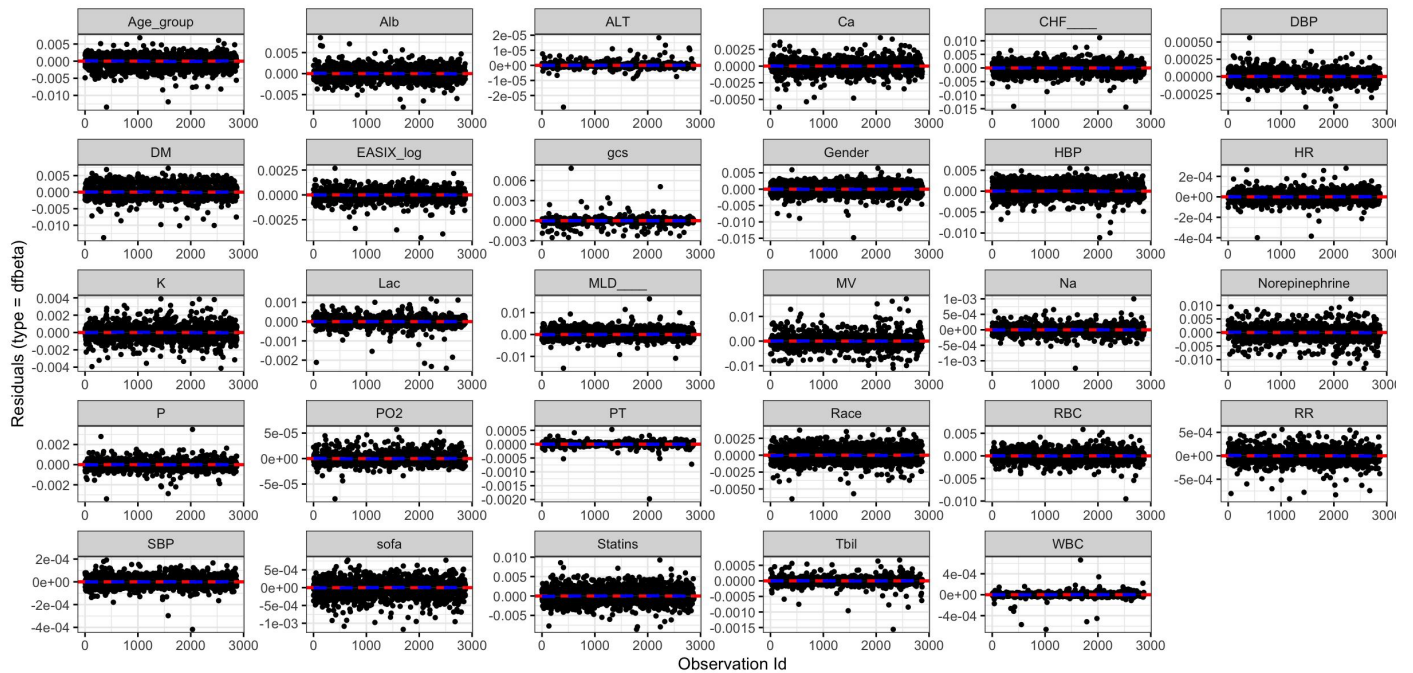


Figure S1. DFBETA plots for all covariates. Each panel shows the influence of individual observations on the estimated coefficient of the corresponding variable; dots represent DFBETA values, and the horizontal line indicates zero influence.

Supplemental material 3.

Model fit evaluation based on deviance residues

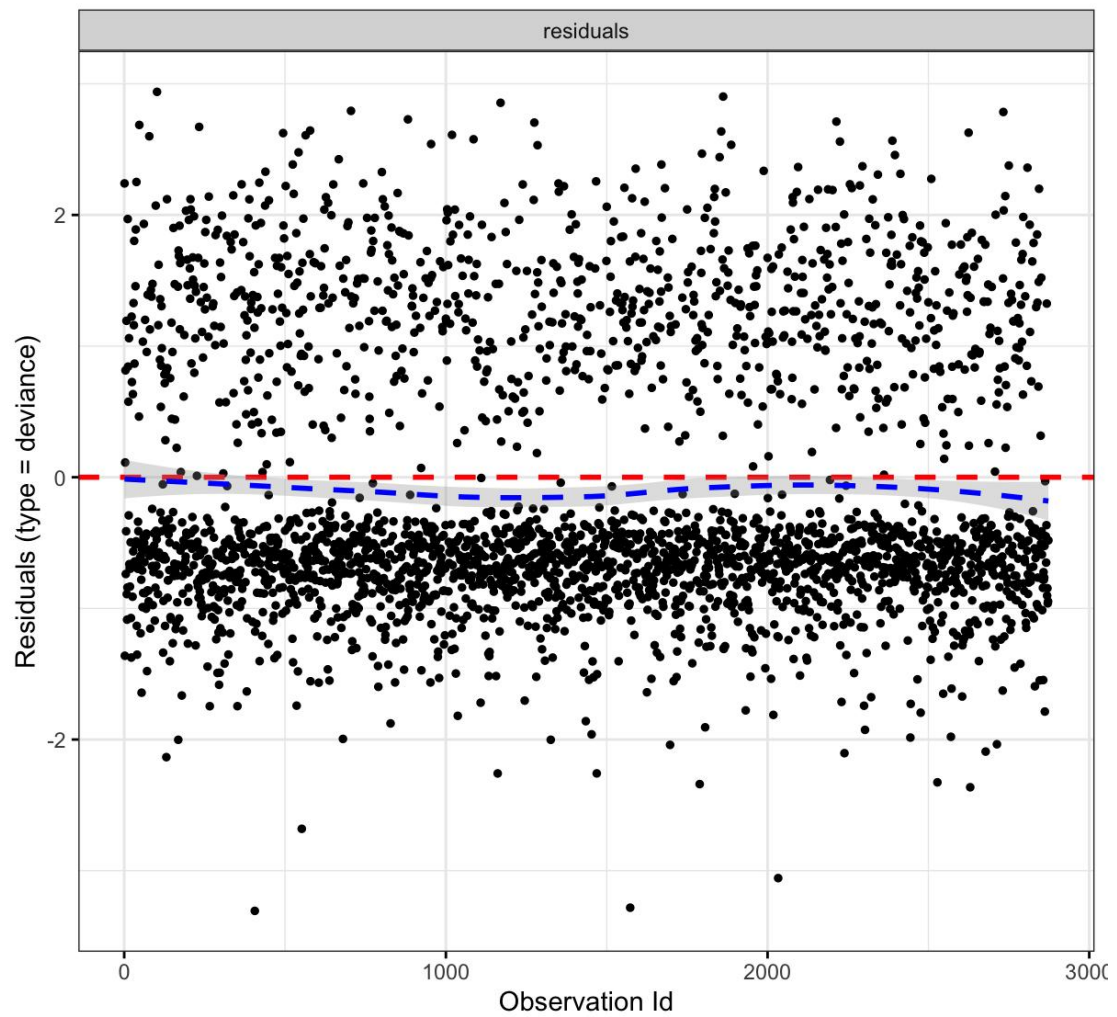


Figure S2. Deviance residuals plotted against observation ID for the final model.

Each point represents the deviance residual of one observation; the red dashed line indicates zero residuals, and the blue dashed line shows the smoothed trend of residuals, which remains close to zero across observations.

Supplemental material 4. Sensitivity analysis of all cases

	Non-adjusted		Model 1		Model 2		Model 3	
	HR (95%CI)	P value	HR (95%CI)	P value	HR (95%CI)	P value	HR (95%CI)	P value
Log2(EASIX)	1.252(1.172-1.338)	<0.001	1.268(1.185-1.355)	<0.001	1.137(1.045-1.238)	0.003	1.167(1.075-1.266)	<0.001
Quartile of log2(EASIX)								
<1.587	Reference		Reference		Reference		Reference	
1.587~2	1.449(0.939-2.236)	0.094	1.399(0.906-2.162)	0.130	1.504(0.958-2.361)	0.076	1.637(1.046-2.563)	0.031
2.727~4	1.750(1.149-2.666)	0.009	1.749(1.147-2.667)	0.009	1.439(0.926-2.237)	0.110	1.560(1.004-2.422)	0.048
≥4.069	2.835(1.908-4.213)	<0.001	2.900(1.948-4.318)	<0.001	1.678(1.061-2.656)	0.027	1.927(1.230-3.018)	0.004
P for trend		<0.001		<0.001		0.056		<0.001

Model 1 was adjusted for age, gender, and race.

Model 2 was adjusted for the covariates in Model 1 plus heart rate, respiratory rate, systolic blood pressure, diastolic blood pressure, albumin, AST, calcium, phosphorus, lactate, sodium, potassium, PO₂, PT, RBC, TBIL, WBC, diabetes, hypertension, liver disease, congestive heart failure, statin use, norepinephrine use, mechanical ventilation, GCS, and SOFA.

Model 3 included the same covariates as Model 2, except that SOFA was removed.

Continuous HRs are interpreted per 1-unit increase in $\log_2(\text{EASIX})$.

Abbreviations: HR: Hazard ratio; AST: Aspartate aminotransferase; PO_2 : Partial pressure of oxygen; PT: Prothrombin time; RBC: Red blood cell; TBIL: Total bilirubin; WBC: White blood cell; GCS: Glasgow coma scale; SOFA: Sequential organ failure assessment; EASIX: Endothelial activation and stress index.

Supplemental material 5. Sensitivity analysis based on the start of CRRT as the time zero point

	Non-adjusted		Model 1		Model 2		Model 3	
	HR(95%CI)	P value	HR(95%CI)	P value	HR(95%CI)	P value	HR(95%CI)	P value
Log2(EASIX)	1.202(1.166-1.239)	<0.001	1.205(1.169-1.243)	<0.001	1.214(1.175-1.255)	<0.001	1.225(1.186-1.266)	<0.001
Quartile of log2(EASIX)								
<1.587	Reference		Reference		Reference		Reference	
1.587~2	1.156(0.950-1.408)	0.15	1.150(0.944-1.401)	0.2	1.112(0.910-1.357)	0.3	1.144(0.937-1.395)	0.2
2.727~4	1.520(1.259-1.837)	<0.001	1.588(1.314-1.921)	<0.001	1.589(1.307-1.932)	<0.001	1.651(1.360-2.005)	<0.001
≥4.069	2.330(1.944-2.791)	<0.001	2.371(1.974-2.847)	<0.001	2.393(1.967-2.910)	<0.001	2.545(2.100-3.085)	<0.001

Model 1: adjusted for age, gender, and race.

Model 2: adjusted for Model 1 plus heart rate, respiratory rate, systolic blood pressure, diastolic blood pressure, albumin, AST, calcium, phosphorus, Lac, sodium, potassium, PO₂, PT, RBC, TBIL, WBC, diabetes, hypertension, liver disease, congestive heart failure, statins, norepinephrine, mechanical ventilation, GCS, and SOFA.

Model 3: SOFA was removed compared to Model 2.

Continuous HRs are per 1-unit increase in log₂(EASIX); that is, each HR corresponds to one additional unit of log₂(EASIX).

Abbreviations: HR: Hazard ratio; AST: Aspartate aminotransferase; Lac: Lactate; PO₂: Partial pressure of oxygen; PT: Prothrombin time; RBC: Red blood cell; TBIL: Total bilirubin; WBC: White blood cell; GCS: Glasgow Coma Scale; SOFA: Sequential Organ Failure Assessment; EASIX: Endothelial activation and stress index.

Supplemental material 6. Logistic regression analysis of the impact of EASIX on the 28-day mortality rate of CRRT patients

	Non-adjusted		Model 1		Model 2		Model 3	
	OR(95%CI)	P value	OR(95%CI)	P value	OR(95%CI)	P value	OR(95%CI)	P value
Log2(EASIX)	1.236(1.182-1.294)	<0.001	1.246(1.190-1.306)	<0.001	1.269(1.203-1.339)	<0.001	1.285(1.219-1.355)	<0.001
Quartile of log2(EASIX)								
<1.587	Reference		Reference		Reference		Reference	
1.587~2	1.185(0.924-1.521)	0.2	1.182(0.917-1.523)	0.2	1.098(0.840-1.435)	0.5	1.131(0.867-1.477)	0.4
2.727~4	1.652(1.292-2.117)	<0.001	1.734(1.348-2.233)	<0.001	1.717(1.309-2.254)	<0.001	1.798(1.374-2.357)	<0.001
≥4.069	2.679(2.091-3.442)	<0.001	2.761(2.141-3.572)	<0.001	2.908(2.179-3.892)	<0.001	3.117(2.344-4.160)	<0.001

Model 1: adjusted for age, gender, and race.

Model 2: adjusted for Model 1 plus heart rate, respiratory rate, systolic blood pressure, diastolic blood pressure, albumin, AST, calcium, phosphorus, Lac, sodium, potassium, PO₂, PT, RBC, TBIL, WBC, diabetes, hypertension, liver disease, congestive heart failure, statins, norepinephrine, mechanical ventilation, GCS, and SOFA.

Model 3: SOFA was removed compared to Model 2.

Continuous HRs are reported per 1-unit increase in log₂(EASIX); that is, each HR corresponds to one additional unit of log₂(EASIX).

Abbreviations: HR: Hazard ratio; AST: Aspartate aminotransferase; Lac: Lactate; PO₂: Partial pressure of oxygen; PT: Prothrombin time; RBC: Red blood cell; TBIL: Total bilirubin; WBC: White blood cell; GCS: Glasgow Coma Scale; SOFA: Sequential Organ Failure Assessment; EASIX: Endothelial activation and stress index.