

Table S1 | Proportion of missing data for study variables.

Variable	Missing number	Missing percent (%)
Albumin	985	61.83
LDH	904	56.75
CK Index	900	56.5
CK-MB	823	51.66
ANC	771	48.4
ALC	771	48.4
SO ₂	762	47.83
Total bilirubin	599	37.6
ALT	594	37.29
ALP	592	37.16
AST	588	36.91
Lactate	338	21.22
PaO ₂	224	14.06
PaCO ₂	224	14.06
PH	224	14.06
Baseexcess	224	14.06
Temperature	137	8.6
PTT	102	6.4
INR	96	6.03
PT	96	6.03
ventilator hour	95	5.96
Calcium	90	5.65
Glucose	17	1.07
WBC	13	0.82
RBC	13	0.82
RDW	13	0.82
Platelet	12	0.75
Hemoglobin	12	0.75
Hematocrit	11	0.69
AG	11	0.69
Creatinine	10	0.63
Potassium	9	0.56
Bun	9	0.56
Bicarbonate	9	0.56
Sodium	8	0.5
Chloride	8	0.5

LDH, lactate dehydrogenase; CK-MB, Creatine Kinase-MB; CK index: Creatine Kinase Index; ANC: absolute neutrophil Count; ALC: absolute lymphocyte Count; SO₂, Oxygen Saturation; ALT, alanine aminotransferase; ALP, alkaline phosphatase; AST, aspartate aminotransferase; PaO₂, partial pressure of arterial oxygen; PaCO₂, partial pressure of arterial; PH, potential of hydrogen; PTT, partial thromboplastin time; INR: international normalized ratio; AG, anion gap; LDH, lactate dehydrogenase; BUN, blood urea nitrogen;

Table S2 | Both univariate and multivariate Cox regression analysis of the association between FB trajectories in 28 - day mortality

Variables	Univariate		Multivariate	
	<i>P</i>	HR ^b (95%CI)	<i>P</i>	HR (95%CI)
class				
1		1.00 (Reference)		1.00 (Reference)
2	0.025	0.741 (0.569–0.963)	<0.001	0.568 (0.427–0.750)
3	0.653	1.099 (0.728–1.661)	0.790	0.943 (0.609–1.457)
4	<.001	3.482 (2.557–4.740)	<0.001	2.876 (1.869–4.412)
Age	<0.001	1.037 (1.028 - 1.045)	<0.001	1.039 (1.027–1.051)
gender				
male		1.00 (Reference)		
female	0.257	1.124 (0.917–1.378)		
weight	<0.001	0.991 (0.987 - 0.995)	0.015	0.994 (0.990–0.999)
HR	0.586	1.001 (0.996–1.007)		
MAP	0.793	0.999 (0.994–1.005)		
RR	0.015	1.019 (1.004–1.034)	0.275	1.009 (0.993–1.025)
temperature	0.936	0.996 (0.893–1.110)		
SpO2	0.077	0.984 (0.968–1.001)		
glucose	0.134	1.001 (1.000–1.002)		
creatinine	<0.001	1.145 (1.071–1.224)	0.697	1.027 (0.892–1.182)
bun	<0.001	1.009 (1.006–1.012)	0.119	1.004 (1.000–1.008)
calcium	0.635	0.972 (0.863–1.094)		
potassium	0.283	1.070 (0.947–1.209)		
sodium	0.491	1.006 (0.988–1.025)		
chloride	0.235	0.991 (0.978–1.005)		
bicarbonate	0.109	0.985 (0.967–1.003)		
aniongap	<0.001	1.036 (1.015–1.057)	0.507	0.991 (0.967–1.017)
PT	0.171	1.005 (0.998–1.013)		
PTT	0.195	1.002 (0.999–1.005)		
INR	0.192	1.056 (0.973–1.146)		
WBC	0.008	1.017 (1.005–1.030)	0.368	1.006 (0.993–1.020)
RBC	0.101	0.903 (0.797–1.022)		
platelet	0.307	1.000 (0.999–1.001)		
RDW	<0.001	1.092 (1.048–1.137)	0.016	1.057 (1.011–1.105)
hemoglobin	0.052	0.959 (0.919–1.001)		
hematocrit	0.253	0.992 (0.978–1.006)		
Myocardial infarct				
No		1.00 (Reference)		
Yes	0.291	1.119 (0.906–1.385)		
Cerebrovascular disease				
No				1.00 (Reference)
Yes	0.046	1.267 (1.004–1.599)	0.01	1.420 (1.089–1.858)
Dementia				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.026	1.690 (1.065–2.682)	0.753	1.079 (0.672–1.730)
Peptic ulcer disease				
No		1.00 (Reference)		
Yes	0.397	0.739 (0.366–1.492)		
Mild liver disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.028	1.417 (1.038–1.935)	0.076	1.354 (0.970–1.888)
Hypertensive				
No		1.00 (Reference)		

Variables	Univariate		Multivariate	
	<i>P</i>	HR ^b (95%CI)	<i>P</i>	HR (95%CI)
Yes	0.12	0.851 (0.693–1.045)		
Hyperlipidemia				
No		1.00 (Reference)		
Yes	0.332	0.904 (0.736–1.110)		
COPD				
No		1.00 (Reference)		
Yes	0.548	1.092 (0.819–1.455)		
Diabetes				
No		1.00 (Reference)		
Yes	0.994	0.999 (0.813–1.228)		
Renal Disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.002	1.380 (1.126–1.693)	0.855	1.029 (0.750–1.412)
AKI				
No		1.00 (Reference)		
Yes	0.302	1.483 (0.703–3.127)		
Sepsis				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	2.220 (1.530–3.222)	<0.001	1.948 (1.327–2.847)
delirium				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.003	1.361 (1.109–1.670)	0.479	1.082 (0.871–1.341)
charlson_comorbidity	<0.001	1.155 (1.107–1.205)	0.438	1.032 (0.952–1.118)
dobutamine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.733 (1.334–2.248)	0.002	1.551 (1.182–2.032)
dopamine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.637 (1.230–2.177)	0.06	1.334 (0.990–1.809)
milrinone				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.002	0.577 (0.411–0.809)	0.004	0.585 (0.402–0.841)
epinephrine				
No		1.00 (Reference)		
Yes	0.07	0.781 (0.597–1.021)		
norepinephrine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.895 (1.510–2.379)	<0.001	1.632 (1.261–2.111)
phenylephrine				
No		1.00 (Reference)		
Yes	0.806	0.974 (0.791–1.199)		
neuroblock				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.004	1.524 (1.141–2.035)	<0.001	1.991 (1.422–2.783)
vasopressin				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.725 (1.397–2.130)	<0.001	1.587 (1.228–2.049)
ventilator				
No		1.00 (Reference)		
Yes	0.405	0.844 (0.566–1.259)		1.00 (Reference)
ventilator_hour	0.011	1.000 (0.999–1.000)	<0.001	0.998 (0.997–0.999)
CRRT				

Variables	Univariate		Multivariate	
	<i>P</i>	HR ^b (95%CI)	<i>P</i>	HR (95%CI)
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.787 (1.340–2.382)	0.087	0.703 (0.471–1.049)
sofa	0.421	0.983 (0.944–1.024)		
FO				
No		1.00 (Reference)		
Yes	<0.001	2.288 (1.806–2.899)		

Note: Variables with a P-value < 0.1 in the univariate regression analysis were included in the multivariate regression analysis. A forward stepwise selection method was employed to construct the final model.

Abbreviation: HRb: Hazards Ratio; CI: Confidence Interval; HR, heart rate; MAP, mean arterial pressure; RR, mean arterial pressure; SpO₂, arterial oxygen saturation; BUN, blood urea nitrogen; AG, anion gap; PT, prothrombin time; PTT, partial thromboplastin time; INR: international normalized ratio; ANC: absolute neutrophil Count; ALC: absolute lymphocyte Count; WBC, white blood cell count; RBC, red blood cell count; RDW, red cell distribution width; SO₂, Oxygen Saturation; PaO₂, partial pressure of arterial oxygen; PaCO₂, partial pressure of arterial; PH, potential of hydrogen; COPD, chronic obstructive pulmonary disease; AKI: acute kidney injury; CRRT, continuous renal replacement therapy; FO, fluid overload.

Table S3 | Both univariate and multivariate Cox regression analysis of the association between FB trajectories in 90 - day mortality

Variables	Univariate		Multivariate	
	P	HR ^b (95%CI)	P	HR (95%CI)
class	1.488	1.250 [0.768, 1.733]		
1		1.00 (Reference)		1.00 (Reference)
2	0.040	0.800 (0.647–0.990)	<0.001	0.667 (0.549–0.809)
3	0.308	1.191 (0.851–1.666)	0.919	1.019 (0.706–1.472)
4	<0.001	2.989 (2.711–5.146)	<0.001	2.731 (1.865–4.000)
Age	<0.001	1.036 [2.251,3.969]	<0.001	1.036 (1.026–1.046)
gender				
male		1.00 (Reference)		
female	0.068	1.171 (0.989–1.387)		
weight	<0.001	0.991 (0.988–0.995)	0.007	0.995 (0.992–0.998)
HR	0.92	1.000 (0.996–1.005)		
MAP	0.778	1.001 (0.996–1.006)		
RR	0.009	1.017 (1.004–1.030)	0.173	1.010 (0.996–1.024)
temperature	0.196	0.944 (0.866–1.029)		
SpO2	0.13	0.988 (0.973–1.004)		
glucose	0.226	1.001 (1.000–1.002)		
creatinine	<0.001	1.141 (1.079–1.206)	0.453	1.042 (0.933–1.165)
bun	<0.001	1.010 (1.007–1.012)	0.014	1.005 (1.001–1.010)
calcium	0.599	0.974 (0.877–1.081)		
potassium	0.354	1.051 (0.947–1.166)		
sodium	0.275	1.009 (0.993–1.024)		
chloride	0.194	0.992 (0.980–1.004)		
bicarbonate	0.417	0.994 (0.978–1.009)		
aniongap	0.003	1.027 (1.010–1.045)	0.323	0.989 (0.967–1.012)
PT	0.089	1.006 (0.999–1.012)		
PTT	0.668	1.001 (0.998–1.004)		
INR	0.093	1.060 (0.991–1.135)		
WBC	0.013	1.014 (1.003–1.026)	0.172	1.008 (0.996–1.021)
RBC	0.009	0.871 (0.786–0.966)	0.913	0.983 (0.719–1.343)
platelet	0.37	1.000 (0.999–1.001)		
RDW	<0.001	1.084 (1.047–1.122)	0.134	1.034 (0.990–1.079)
hemoglobin	0.003	0.948 (0.914–0.982)	0.07	0.863 (0.741–1.003)
hematocrit	0.036	0.988 (0.976–0.999)	0.155	1.045 (0.984–1.110)
Myocardial infarct				
No		1.00 (Reference)		
Yes	0.416	1.076 (0.901–1.285)		
Cerebrovascular disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.025	1.254 (1.029–1.527)	0.005	1.383 (1.108–1.727)
Dementia				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.002	1.839 (1.255–2.695)	0.254	1.257 (0.882–1.790)
Peptic ulcer disease				
No		1.00 (Reference)		
Yes	0.727	0.910 (0.534–1.550)		
Mild liver disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.031	1.344 (1.030–1.754)	0.053	1.330 (0.998–1.778)
Hypertensive				
No		1.00 (Reference)		1.00 (Reference)

Variables	Univariate		Multivariate	
	P	HR ^b (95%CI)	P	HR (95%CI)
Yes	0.023	0.820 (0.692–0.971)	0.535	0.927 (0.729–1.176)
Hyperlipidemia				
No		1.00 (Reference)		
Yes	0.125	0.874 (0.737–1.037)		
COPD				
No		1.00 (Reference)		
Yes	0.296	1.136 (0.894–1.443)		
Diabetes				
No				
Yes	0.986	0.999 (0.841–1.184)		
Renal Disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.414 (1.191–1.678)	0.971	0.994 (0.717–1.365)
AKI				
No		1.00 (Reference)		
Yes	0.2	1.506 (0.810–2.802)		
Sepsis				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	2.085 (1.549–2.806)	<0.001	1.768 (1.287–2.428)
delirium				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.024	1.215 (1.025–1.440)	0.691	1.038 (0.867–1.239)
charlson_comorbidity	<0.001	1.161 (1.120–1.203)	0.453	1.025 (0.961–1.094)
dobutamine				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.001	1.462 (1.165–1.835)	0.004	1.431 (1.107–1.850)
dopamine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.530 (1.194–1.959)	0.114	1.239 (0.949–1.614)
milrinone				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	0.571 (0.429–0.758)	0.002	0.586 (0.416–0.826)
epinephrine				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.01	0.742 (0.592–0.930)	0.609	0.930 (0.717–1.206)
norepinephrine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.674 (1.393–2.012)	<0.001	1.415 (1.182–1.692)
phenylephrine				
No		1.00 (Reference)		
Yes	0.804	1.022 (0.859–1.216)		
neuroblock				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.036	1.318 (1.019–1.706)	0.013	1.443 (1.078–1.927)
vasopressin				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.483 (1.233–1.783)	<0.001	1.471 (1.188–1.816)
ventilator				
No		1.00 (Reference)		
Yes	0.509	0.891 (0.633–1.253)		
ventilator_hour	0.4	1.000 (1.000–1.001)		
CRRT				

Variables	Univariate		Multivariate	
	P	HR ^b (95%CI)	P	HR (95%CI)
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.592 (1.245–2.036)	0.023	0.672 (0.468–0.964)
sofa	0.682	0.993 (0.961–1.026)		
FO				
No		1.00 (Reference)		
Yes	<0.001	2.093 (1.704–2.573)		

Note: Variables with a P-value < 0.1 in the univariate regression analysis were included in the multivariate regression analysis. A forward stepwise selection method was employed to construct the final model.

Abbreviation: HR^b: Hazards Ratio; CI: Confidence Interval; HR, heart rate; MAP, mean arterial pressure; RR, mean arterial pressure; SpO₂, arterial oxygen saturation; BUN, blood urea nitrogen; AG, anion gap; PT, prothrombin time; PTT, partial thromboplastin time; INR: international normalized ratio; ANC: absolute neutrophil Count; ALC: absolute lymphocyte Count; WBC, white blood cell count; RBC, red blood cell count; RDW, red cell distribution width; SO₂, Oxygen Saturation; PaO₂, partial pressure of arterial oxygen; PaCO₂, partial pressure of arterial; PH, potential of hydrogen; COPD, chronic obstructive pulmonary disease; AKI: acute kidney injury; CRRT, continuous renal replacement therapy; FO, fluid overload.

Table S4 | Both univariate and multivariate Cox regression analysis of the association between FB trajectories in 365 - day mortality

Variables	Univariate		Multivariate	
	<i>P</i>	HR ^b (95%CI)	<i>P</i>	HR (95%CI)
class				
1		1.00 (Reference)		1.00 (Reference)
2	0.030	0.814 (0.676–0.980)	0.001	0.721 (0.600–0.866)
3	0.636	1.078 (0.790–1.470)	0.377	0.861 (0.629–1.180)
4	<0.001	2.751 (2.110–3.586)	<0.001	2.643 (1.907–3.664)
Age	<0.001	1.034 (1.028–1.041)	<0.001	1.029 (1.021–1.038)
gender				
male				
female	0.026	1.187 (1.021–1.384)	0.954	1.005 (0.851–1.189)
weight	<0.001	0.992 (0.989–0.995)	0.005	0.995 (0.992–0.998)
HR	0.604	0.999 (0.995–1.003)		
MAP	0.651	1.001 (0.997–1.005)		
RR	0.019	1.013 (1.002–1.025)	0.195	1.008 (0.996–1.021)
temperature	0.067	0.932 (0.863–1.006)		
SpO2	0.088	0.988 (0.974–1.002)		
glucose	0.55	1.000 (0.999–1.001)		
creatinine	<0.001	1.145 (1.090–1.202)	0.185	1.067 (0.969–1.176)
bun	<0.001	1.010 (1.008–1.012)	0.008	1.005 (1.001–1.009)
calcium	0.875	1.007 (0.924–1.098)		
potassium	0.386	1.042 (0.950–1.142)		
sodium	0.227	1.008 (0.995–1.022)		
chloride	0.273	0.994 (0.983–1.005)		
bicarbonate	0.726	0.998 (0.984–1.012)		
aniongap	0.011	1.021 (1.005–1.037)	0.192	0.987 (0.968–1.007)
PT	0.05	1.006 (1.000–1.012)		
PTT	0.388	1.001 (0.999–1.004)		
INR	0.04	1.065 (1.003–1.131)	0.681	0.986 (0.922–1.056)
WBC	0.163	1.008 (0.997–1.019)		
RBC	0.009	0.887 (0.809–0.972)	0.703	1.054 (0.803–1.386)
platelet	0.683	1.000 (0.999–1.001)		
RDW	<0.001	1.106 (1.075–1.139)	0.002	1.060 (1.022–1.100)
hemoglobin	<0.001	0.946 (0.918–0.975)	0.091	0.886 (0.767–1.024)
hematocrit	0.014	0.987 (0.977–0.998)	0.276	1.030 (0.977–1.086)
Myocardial infarct				
No		1.00 (Reference)		
Yes	0.134	1.127 (0.963–1.320)		
Cerebrovascular disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.019	1.235 (1.034–1.473)	0.012	1.292 (1.057–1.578)
Dementia				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	2.076 (1.494–2.883)	0.08	1.358 (0.971–1.900)
Peptic ulcer disease				
No		1.00 (Reference)		
Yes	0.737	0.923 (0.578–1.472)		
Mild liver disease				
No		1.00 (Reference)		
Yes	0.075	1.250 (0.978–1.596)		
Hypertensive				
No		1.00 (Reference)		1.00 (Reference)

Variables	Univariate		Multivariate	
	<i>P</i>	HR ^b (95%CI)	<i>P</i>	HR (95%CI)
Yes	0.013	0.825 (0.709–0.959)	0.955	0.994 (0.803–1.228)
Hyperlipidemia				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.046	0.856 (0.737–0.994)	0.006	0.800 (0.689–0.928)
COPD				
No		1.00 (Reference)		
Yes	0.112	1.185 (0.962–1.462)		
Diabetes				
No		1.00 (Reference)		
Yes	0.281	1.087 (0.936–1.262)		
Renal Disease				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.461 (1.254–1.702)	0.633	0.936 (0.711–1.230)
AKI				
No		1.00 (Reference)		
Yes	0.317	1.299 (0.777–2.170)		
Sepsis				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.673 (1.319–2.121)	0.002	1.487 (1.156–1.913)
delirium				
No		1.00 (Reference)		
Yes	0.3	1.083 (0.931–1.258)		1.00 (Reference)
charlson_comorbidity	<0.001	1.174 (1.137–1.211)	0.019	1.070 (1.012–1.132)
dobutamine				
No		1.00 (Reference)		1.00 (Reference)
Yes	0.004	1.357 (1.100–1.674)	0.007	1.364 (1.099–1.692)
dopamine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.540 (1.233–1.923)	0.025	1.311 (1.030–1.667)
milrinone				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	0.541 (0.420–0.698)	<0.001	0.580 (0.431–0.780)
epinephrine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	0.676 (0.549–0.831)	0.358	0.889 (0.700–1.129)
norepinephrine				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.468 (1.252–1.720)	0.005	1.298 (1.099–1.534)
phenylephrine				
No		1.00 (Reference)		
Yes	0.644	0.964 (0.825–1.126)		
neuroblock				
No		1.00 (Reference)		
Yes	0.158	1.187 (0.934–1.508)		
vasopressin				
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.370 (1.164–1.612)	<0.001	1.512 (1.247–1.832)
ventilator				
No		1.00 (Reference)		
Yes	0.363	0.869 (0.642–1.177)		1.00 (Reference)
ventilator_hour	0.016	1.000 (1.000–1.001)	0.276	1.000 (1.000–1.001)
CRRT				

Variables	Univariate		Multivariate	
	<i>P</i>	HR ^b (95%CI)	<i>P</i>	HR (95%CI)
No		1.00 (Reference)		1.00 (Reference)
Yes	<0.001	1.606 (1.288–2.001)	0.089	0.767 (0.569–1.032)
sofa	0.279	0.984 (0.954–1.014)		
FO				
No		1.00 (Reference)		
Yes	<0.001	1.968 (1.630–2.374)		

Note: Variables with a P-value < 0.1 in the univariate regression analysis were included in the multivariate regression analysis. A forward stepwise selection method was employed to construct the final model.

Abbreviation: HRb: Hazards Ratio; CI: Confidence Interval; HR, heart rate; MAP, mean arterial pressure; RR, mean arterial pressure; SpO₂, arterial oxygen saturation; BUN, blood urea nitrogen; AG, anion gap; PT, prothrombin time; PTT, partial thromboplastin time; INR: international normalized ratio; ANC: absolute neutrophil Count; ALC: absolute lymphocyte Count; WBC, white blood cell count; RBC, red blood cell count; RDW, red cell distribution width; SO₂, Oxygen Saturation; PaO₂, partial pressure of arterial oxygen; PaCO₂, partial pressure of arterial; PH, potential of hydrogen; COPD, chronic obstructive pulmonary disease; AKI: acute kidney injury; CRRT, continuous renal replacement therapy; FO, fluid overload.

Table S5 | Comparison of baseline characteristics between included and excluded patients.

Variable	Overall N=16579	Included patients N=1593	Excluded patients N=14986	P
Demographics(median [IQR]and n(%))				
Age	75.00 [65.00, 84.00]	74.00 [64.00, 82.00]	75.00 [65.00, 84.00]	<0.001
Gender				0.033
Male	9197 (55.5)	925 (58.1)	8272 (55.2)	0.031
Female	7382 (44.5)	668 (45.5)	6714 (44.2)	
Weight,kg	79.30 [66.00, 95.30]	82.40 [68.50, 100.00]	79.00 [66.00, 95.00]	<0.001
HR,bpm	85.00 [74.00, 100.00]	88.00 [76.00, 105.00]	85.00 [74.00, 99.00]	<0.001
MAP,mmHg	81.00 [70.00, 93.00]	80.00 [69.00, 92.00]	81.00 [70.00, 93.00]	0.009
RR,bpm	19.00 [16.00, 23.00]	20.00 [16.00, 24.00]	19.00 [16.00, 23.00]	<0.001
Temperature,°C	36.67 [36.39, 37.00]	36.70 [36.33, 37.11]	36.67 [36.39, 36.94]	0.001
SpO ₂ ,%	97.00 [95.00, 100.00]	98.00 [94.00, 100.00]	97.00 [95.00, 100.00]	0.383
Glucose,mg/dL	135.00 [108.00, 178.00]	143.00 [115.00, 189.00]	134.00 [108.00, 177.00]	<0.001
Laboratory indicators(median [IQR]and n(%))				
Creatinine,mg/dl	1.20 [0.90, 1.90]	1.20 [0.90, 1.80]	1.20 [0.90, 1.90]	0.415
Bun,mmol/L	26.00 [17.00, 43.00]	27.00 [18.00, 44.00]	26.00 [17.00, 43.00]	0.028
Calcium,mg/dL	8.50 [8.10, 9.00]	8.40 [7.80, 8.90]	8.60 [8.10, 9.00]	<0.001
Potassium,mmol/L	4.20 [3.80, 4.70]	4.20 [3.80, 4.70]	4.20 [3.80, 4.70]	0.789
Sodium,mmol/L	138.00 [135.00, 141.00]	139.00 [136.00, 142.00]	138.00 [135.00, 141.00]	0.001
Chloride,mmol/L	103.00 [98.00, 107.00]	103.00 [99.00, 107.75]	103.00 [98.00, 107.00]	<0.001
Bicarbonate,mmol/L	23.00 [20.00, 26.00]	23.00 [20.00, 26.00]	23.00 [20.00, 26.00]	<0.001
AG,mmol/L	14.00 [12.00, 17.00]	15.00 [12.00, 18.00]	14.00 [12.00, 17.00]	<0.001
ALT,U/L	26.00 [15.00, 56.00]	29.00 [17.00, 79.00]	25.00 [15.00, 54.00]	<0.001
ALP,U/L	87.00 [65.00, 127.00]	83.00 [62.00, 120.00]	87.00 [65.00, 128.00]	<0.001
AST,U/L	37.00 [23.00, 81.00]	45.00 [26.00, 115.00]	37.00 [23.00, 78.00]	<0.001
LDH,U/L	292.00 [221.00, 430.00]	345.00 [243.25, 530.75]	288.00 [218.00, 419.00]	<0.001
Total bilirubin,mg/dL	0.70 [0.40, 1.20]	0.70 [0.50, 1.30]	0.70 [0.40, 1.20]	0.007
CK-MB, mg/mL	6.00 [3.00, 18.75]	8.00 [4.00, 25.00]	15.00 [4.00, 43.25]	<0.001

Variable	Overall N=16579	Included patients N=1593	Excluded patients N=14986	P
CK Index, %	5.00 [3.00, 13.00]	7.00 [3.00, 18.00]	5.00 [3.00, 13.00]	0.001
PT,s	14.70 [12.80, 18.10]	14.90 [13.10, 18.80]	14.70 [12.80, 18.00]	0.001
PTT,s	32.40 [28.10, 41.70]	33.00 [28.30, 43.50]	32.30 [28.10, 41.50]	0.041
INR	1.30 [1.20, 1.70]	1.40 [1.20, 1.70]	1.30 [1.20, 1.70]	0.002
ANC,K/uL	9.38 [6.28, 13.74]	10.89 [7.18, 15.78]	9.18 [6.13, 13.47]	<0.001
ALC,K/uL	1.11 [0.67, 1.76]	1.10 [0.67, 1.73]	1.11 [0.68, 1.77]	0.451
WBC,K/uL	10.50 [7.60, 14.60]	11.80 [8.50, 16.60]	10.30 [7.50, 14.40]	<0.001
RBC,m/uL	3.53 [2.99, 4.10]	3.63 [3.05, 4.20]	3.52 [2.99, 4.09]	<0.001
Platelet,K/uL	193.00 [143.00, 256.00]	196.00 [147.00, 264.00]	193.00 [142.00, 256.00]	0.047
RDW,%	14.90 [13.80, 16.60]	14.80 [13.80, 16.40]	15.00 [13.80, 16.60]	0.018
Hemoglobin,g/dL	10.40 [8.80, 12.10]	10.70 [8.90, 12.50]	10.40 [8.80, 12.00]	<0.001
Hematocrit,%	32.10 [27.50, 37.10]	33.00 [28.10, 38.40]	32.00 [27.50, 36.90]	<0.001
SO ₂ ,%	93.00 [72.00, 97.00]	94.00 [81.75, 98.00]	92.00 [71.00, 97.00]	0.004
Lactate,mmol/L	1.60 [1.10, 2.40]	1.70 [1.20, 2.50]	1.60 [1.10, 2.40]	0.01
PaO ₂ ,mmHg	94.00 [53.00, 238.00]	101.00 [63.00, 225.00]	93.00 [52.00, 241.00]	0.005
PaCO ₂ ,mmHg	42.00 [36.00, 49.00]	42.00 [36.00, 51.00]	42.00 [36.00, 49.00]	0.572
PH	7.38 [7.31, 7.42]	7.37 [7.29, 7.42]	7.38 [7.31, 7.42]	0.03
Baseexcess,mEq/L	0.00 [-3.00, 2.00]	0.00 [-4.00, 2.00]	0.00 [-3.00, 2.00]	0.039
Albumin,g/dL	3.30 [2.80, 3.70]	3.20 [2.70, 3.60]	3.30 [2.90, 3.70]	0.003
Comorbidities(median [IQR]and n(%))				
Myocardial infarct	5428 (32.7)	540 (33.9)	4888 (32.6)	0.313
Cerebrovascular disease	2404 (14.5)	333 (20.9)	2071 (13.8)	<0.001
Dementia	894 (5.4)	52 (3.3)	842 (5.6)	<0.001
Peptic ulcer disease	438 (2.6)	44 (2.8)	394 (2.6)	0.816
Mild liver disease	1434 (8.6)	147 (9.2)	1287 (8.6)	0.414
Hypertensive	7582 (45.7)	744 (46.7)	6838 (45.6)	0.428
Hyperlipidemia	8048 (48.5)	711 (44.6)	7337 (49.0)	0.001
COPD	2203 (13.3)	214 (13.4)	1989 (13.3)	0.887
Diabetes	6866 (41.4)	662 (41.6)	6204 (41.4)	0.924
Sepsis	8502 (51.3)	1372 (86.1)	7130 (47.6)	<0.001
Delirium	4131 (32.1)	935 (73.2)	3196 (27.6)	<0.001
Renal Disease	6438 (38.8)	547 (34.3)	5891 (39.3)	<0.001
AKI	12508 (75.4)	1574 (98.8)	10934 (73.0)	<0.001

Variable	Overall N=16579	Included patients N=1593	Excluded patients N=14986	P
Charlson comorbidity	6.00 [5.00, 8.00]	6.00 [4.00, 8.00]	6.50 [4.00, 8.00]	0.6
Intervention (median [IQR] and n(%))				
dobutamine	598 (3.6)	207 (13.0)	391 (2.6)	<0.001
dopamine	771 (4.7)	163 (10.2)	608 (4.1)	<0.001
milrinone	608 (3.7)	236 (14.8)	372 (2.5)	<0.001
epinephrine	1352 (8.2)	327 (20.5)	1025 (6.8)	<0.001
norepinephrine	3815 (23.0)	953 (59.8)	2862 (19.1)	<0.001
phenylephrine	2811 (17.0)	590 (37.0)	2221 (14.8)	<0.001
neuroblock	334 (2.0)	163 (10.2)	171 (1.1)	<0.001
vasopressin	1305 (7.9)	433 (27.2)	872 (5.8)	<0.001
ventilator	13616 (82.1)	1556 (97.7)	12060 (80.5)	<0.001
ventilator hour	37.67 [17.23, 77.80]	172.38 [117.24, 261.06]	32.00 [16.00, 61.87]	<0.001
CRRT	882 (5.3)	236 (14.8)	646 (4.3)	<0.001
SOFA score	1.00 [0.00, 3.00]	2.00 [0.00, 4.00]	1.00 [0.00, 3.00]	<0.001
Outcome (median [IQR] and n(%))				
ICU_LOS [28d], days	28.00 [28.00, 28.00]	28.00 [28.00, 28.00]	28.00 [28.00, 28.00]	<0.001
ICU_Death [28d], n	2712 (16.4)	384 (24.1)	2328 (15.5)	<0.001
ICU_LOS [90d], days	90.00 [90.00, 90.00]	90.00 [30.31, 90.00]	90.00 [90.00, 90.00]	<0.001
ICU_Death [90d], n	4012 (24.2)	541 (34.0)	3471 (23.2)	<0.001
ICU_LOS [365d], days	365.00 [102.06, 365.00]	365.00 [30.31, 365.00]	365.00 [122.19, 365.00]	<0.001
ICU_Death [365d], n	5813 (35.1)	684 (42.9)	5129 (34.2)	<0.001

HR, heart rate; MAP, mean arterial pressure; RR, mean arterial pressure; SpO₂, arterial oxygen saturation; BUN, blood urea nitrogen; AG, anion gap; ALT, alanine aminotransferase; ALP, alkaline phosphatase; AST, aspartate aminotransferase; LDH, lactate dehydrogenase; CK-MB, Creatine Kinase-MB; CK index: Creatine Kinase Index; PT, prothrombin time; PTT, partial thromboplastin time; INR: international normalized ratio; ANC: absolute neutrophil Count; ALC: absolute lymphocyte Count; WBC, white blood cell count; RBC, red blood cell count; RDW, red cell distribution width; SO₂, Oxygen Saturation; PaO₂, partial pressure of arterial oxygen; PaCO₂, partial pressure of arterial; PH, potential of hydrogen; COPD, chronic obstructive pulmonary disease; AKI: acute kidney injury; CRRT, continuous renal replacement therapy; FO, fluid overload.

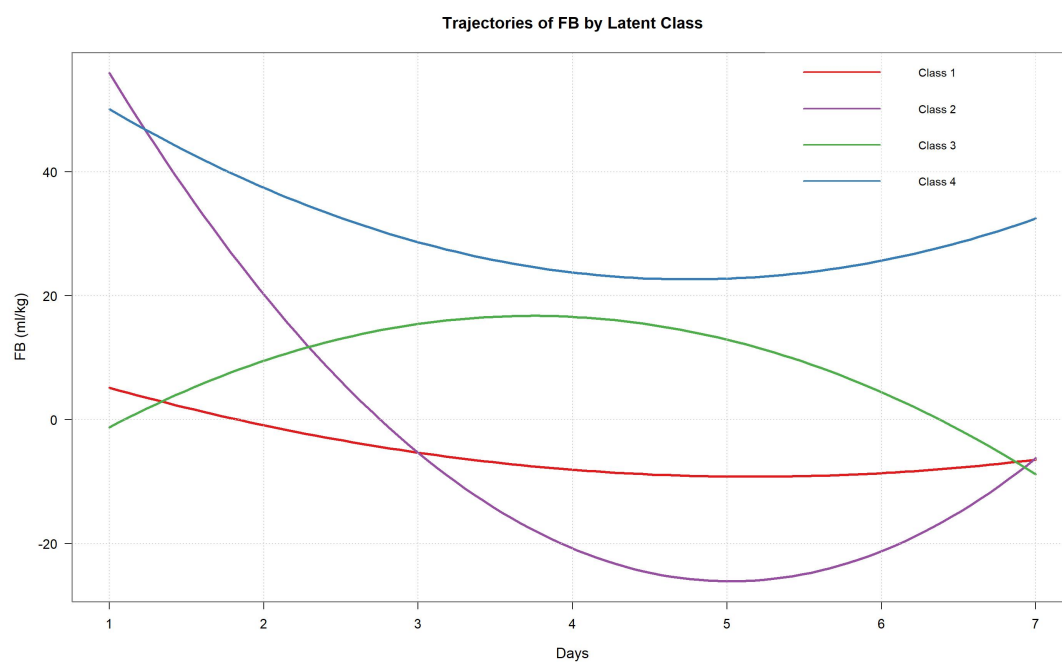


Figure S1| FB trajectory patterns during the first 7 days after admission to the ICU in HF patients without cerebrovascular disease

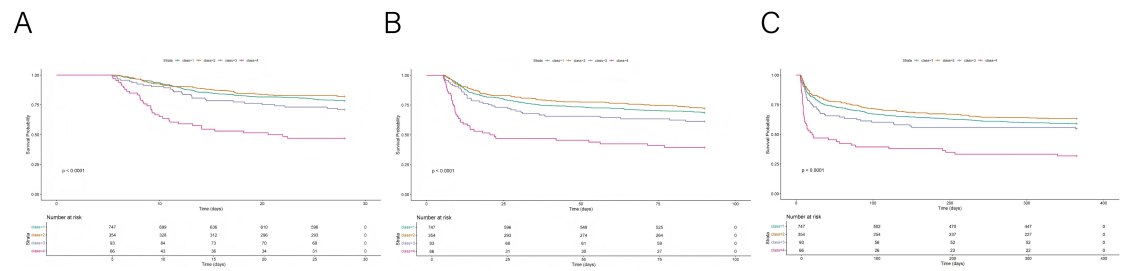


Figure S2 | Kaplan-Meier survival curves showing the relationship between different sensitivity analysis groups of FB trajectory and (A) 28-day mortality; (B) 90-day mortality; (C) 365-day mortality.