

SUPPLEMENTAL DATA

Braden score at ICU admission predicts 30-day mortality in acute pancreatitis

Lihong Dong^{1*}, Hong Wang², Xixiang Yang³, Xiaolin Zhu¹, Chen He¹

¹Department of Critical Care Medicine, The First Affiliated Hospital of Kunming Medical University, Kunming, China;

²Department of Critical Care Medicine, The Sixth Affiliated Hospital of Kunming Medical University, Yuxi, China;

³Second Clinical College, Ningxia Medical University, Yinchuan, China.

*Correspondence to Lihong Dong: 2375126670@qq.com.

Full article is available at the following link: [Braden score at ICU admission predicts 30-day mortality in acute pancreatitis](#)

Supplementary table 1. Complete-case analysis (no imputation) of the association between admission Braden score and all-cause mortality in patients with acute pancreatitis

Outcome	Model 1			Model 2			Model 3		
	HR	95% CI	<i>p</i>	HR	95% CI	<i>p</i>	HR	95% CI	<i>p</i>
30-day mortality									
Continuous	0.840	0.795-0.888	<0.001	0.862	0.813-0.913	<0.001	0.931	0.875-0.990	0.023
Category									
High-risk (Braden score≤15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score >15)	0.469	0.341-0.644	<0.001	0.546	0.395-0.755	<0.001	0.755	0.531-1.074	0.12
90-day mortality									
Continuous	0.873	0.834-0.913	<0.001	0.892	0.851-0.935	<0.001	0.951	0.905-1.001	0.053
Category									
High-risk (Braden score≤15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score >15)	0.569	0.441-0.734	<0.001	0.647	0.499-0.838	<0.001	0.859	0.649-1.137	0.3

>15)									
180-day mortality									
Continuous	0.899	0.863-0.937	<0.001	0.919	0.880-0.960	<0.001	0.968	0.925-1.014	0.2
Category									
High-risk (Braden score≤15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score >15)	0.66	0.524-0.830	<0.001	0.755	0.597-0.953	0.018	0.955	0.741-1.230	0.7
360-day mortality									
Continuous	0.911	0.878-0.946	<0.001	0.928	0.892-0.965	<0.001	0.974	0.933-1.016	0.2
Category									
High-risk (Braden score≤15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score >15)	0.719	0.583-0.885	0.002	0.802	0.649-0.991	0.041	1.006	0.800-1.266	>0.9

Model 1. unadjusted; Model 2. adjusted for admission age group, gender, marital, race; Model 3. adjusted for admission age group, gender, marital, race, heart rate, RR, albumin, aspartate transaminase, urea nitrogen, Calcium, creatinine, glucose, hematocrit, lactate, platelet, PT, PTT, total bili, WBC, MLD, renal disease, severe liver disease, malignant cancer, COPD, congestive heart failure, peripheral vascular disease,

myocardial infarct, HP, norepinephrine, statins, MV, GCS. Abbreviations: HR: Hazard ratio; 95% CI: Confidence interval; RR: Respiratory rate; PT: Prothrombin time; PTT: Partial thromboplastin time; WBC: White blood cell count; COPD: Chronic obstructive pulmonary disease; MV: Mechanical ventilation; GCS: Glasgow Coma Scale.

Supplementary table 2. Results after imputing only variables with $\leq 10\%$ missing values (MissForest)

Outcome	Model 1			Model 2			Model 3		
	HR	95% CI	<i>p</i>	HR	95% CI	<i>p</i>	HR	95% CI	<i>p</i>
30-day mortality									
Continuous	0.810	0.772-0.851	<0.001	0.818	0.777-0.861	<0.001	0.909	0.861-0.959	<0.001
Category									
High-risk (Braden score ≤ 15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score > 15)	0.376	0.282-0.502	<0.001	0.409	0.306-0.548	<0.001	0.627	0.459-0.856	0.003
90-day mortality									
Continuous	0.848	0.814-0.883	<0.001	0.857	0.821-0.893	<0.001	0.936	0.895-0.978	0.004
Category									
High-risk (Braden	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	

score $\leq$ 15)									
Low-risk (Braden score >15)	0.482	0.382-0.607	<0.001	0.522	0.414-0.660	<0.001	0.757	0.590-0.972	0.029
180-day mortality									
Continuous	0.869	0.837-0.902	<0.001	0.879	0.845-0.914	<0.001	0.95	0.911-0.990	0.015
Category									
High-risk (Braden score $\leq$ 15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score >15)	0.549	0.445-0.678	<0.001	0.598	0.484-0.740	<0.001	0.84	0.668-1.055	0.13
360-day mortality									
Continuous	0.884	0.855-0.915	<0.001	0.892	0.861-0.924	<0.001	0.952	0.916-0.989	0.011
Category									
High-risk (Braden score $\leq$ 15)	Ref.	Ref.		Ref.	Ref.		Ref.	Ref.	
Low-risk (Braden score >15)	0.607	0.502-0.734	<0.001	0.651	0.538-0.789	<0.001	0.876	0.713-1.075	0.2

Model 1. unadjusted; Model 2. adjusted for admission age group, gender, marital; Model 3. adjusted for admission age group, gender, marital,

heart rate, RR, albumin, aspartate transaminase, urea nitrogen, calcium, creatinine, glucose, hematocrit, platelet, PT, PTT, total bili, WBC, MLD, renal disease, severe liver disease, Malignant cancer, COPD, congestive heart failure, peripheral vascular disease, myocardial infarct, HP, Norepinephrine, Statins, MV, GCS. Abbreviations: HR: Hazard ratio; CI: Confidence interval; RR: Respiratory rate; PT: Prothrombin time; PTT: Partial thromboplastin time; WBC: White blood cell count; COPD: Chronic obstructive pulmonary disease; MV: Mechanical ventilation; GCS: Glasgow Coma Scale.

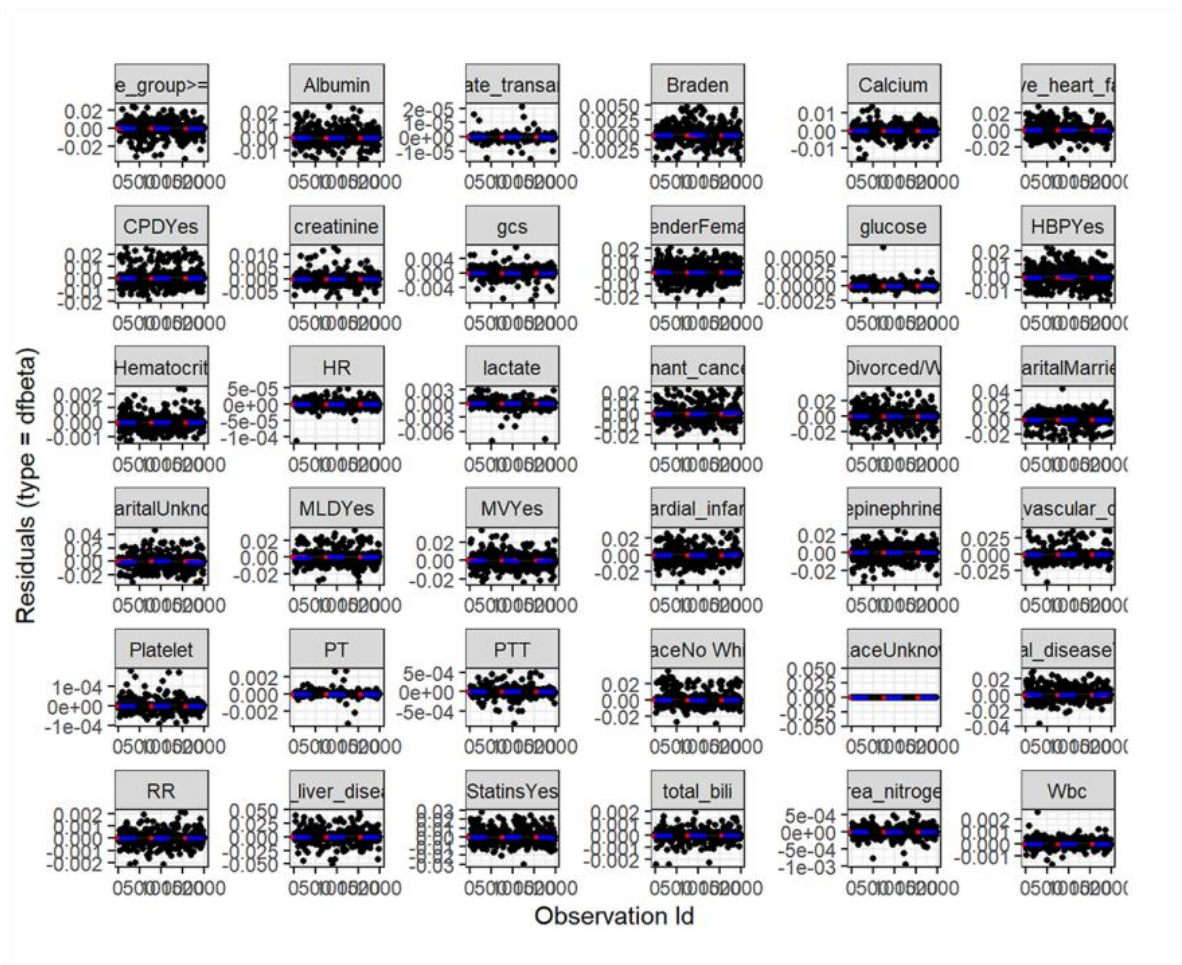
	GVIF	Df	GVIF ^{1/(2·Df)}
Braden	1.390608	1	1.179241
Age_group	1.697123	1	1.302737
Gender	1.312376	1	1.145590
Marital	2.811428	3	1.188013
Race	2.233010	2	1.222426
HR	1.375192	1	1.172686
RR	1.307683	1	1.143540
Albumin	1.442302	1	1.200959
Alanine_transaminase	6.021981	1	2.453973
Aspartate_transaminase	6.142757	1	2.478459
urea_nitrogen	2.518241	1	1.586897
Calcium	1.333396	1	1.154728
creatinine	2.340055	1	1.529724
glucose	1.198291	1	1.094665
Hemoglobin	24.154944	1	4.914768
Hematocrit	24.424489	1	4.942114
INR	25.042888	1	5.004287
lactate	1.712482	1	1.308618
Platelet	1.463714	1	1.209841
PT	25.344094	1	5.034292
PTT	1.552616	1	1.246040
total_bili	2.143349	1	1.464018
wbc	1.352531	1	1.162984
MLD	1.831135	1	1.353194
renal_disease	1.416230	1	1.190055
severe_liver_disease	2.189642	1	1.479744
Malignant_cancer	1.246350	1	1.116400
CPD	1.151712	1	1.073179
congestive_heart_failure	1.380771	1	1.175062
peripheral_vascular_disease	1.235829	1	1.111678
myocardial_infarct	1.320957	1	1.149329
HBP	1.315465	1	1.146937
Norepinephrine	1.882561	1	1.372065
Statins	1.379225	1	1.174404
MV	1.785580	1	1.336256
gcs	1.176695	1	1.084756
sofa	2.178536	1	1.475987

Supplementary figure 1. Collinearity diagnostics before variable exclusion.

Generalized VIF (GVIF), degrees of freedom (Df), and the adjusted $GVIF^{1/(2 \cdot Df)}$ are shown for all covariates. ALT, hemoglobin, and INR exceeded the prespecified threshold (>5) and were removed; AST, HCT, and PT also initially exceeded 5 prior to re-estimation. Abbreviations: GVIF: Generalized variance inflation factor; Df: Degrees of freedom; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; HB: Hemoglobin; HCT: Hematocrit; INR: International normalized ratio; PT: Prothrombin time; PTT: Partial thromboplastin time; TB: Total bilirubin; WBC: White blood cell count; PLT: Platelet count; BUN: Blood urea nitrogen; BG: Blood glucose; RR: Respiratory rate; CHF: Congestive heart failure; PVD: Peripheral vascular disease; HBP: High blood pressure; MV: Mechanical ventilation; GCS: Glasgow Coma Scale; SOFA: Sequential organ failure assessment.

	GVIF	Df	GVIF ^{1/(2*Df)}
Braden	1.378865	1	1.174251
Age_group	1.642768	1	1.281705
Gender	1.293956	1	1.137522
Marital	2.732691	3	1.182402
Race	2.188297	2	1.216260
HR	1.377932	1	1.173854
RR	1.317192	1	1.147690
Albumin	1.442680	1	1.201116
Aspartate_transaminase	1.631605	1	1.277343
urea_nitrogen	2.497703	1	1.580412
Calcium	1.317968	1	1.148028
creatinine	2.377049	1	1.541768
glucose	1.213985	1	1.101810
Hematocrit	1.343677	1	1.159171
lactate	1.627406	1	1.275698
Platelet	1.402109	1	1.184107
PT	1.836003	1	1.354992
PTT	1.525591	1	1.235148
total_bili	2.045345	1	1.430155
wbc	1.322814	1	1.150137
MLD	1.781007	1	1.334544
renal_disease	1.402743	1	1.184374
severe_liver_disease	2.158278	1	1.469108
Malignant_cancer	1.239635	1	1.113389
CPD	1.138883	1	1.067185
congestive_heart_failure	1.367384	1	1.169352
peripheral_vascular_disease	1.227278	1	1.107826
myocardial_infarct	1.315985	1	1.147164
HBP	1.282741	1	1.132582
Norepinephrine	1.866251	1	1.366108
Statins	1.364406	1	1.168078
MV	1.742890	1	1.320186
gcs	1.160288	1	1.077167
sofa	2.139992	1	1.462871

Supplementary figure 2. Collinearity diagnostics after exclusion of high-VIF variables. The table reports GVIF, degrees of freedom (Df), and $GVIF^{1/(2 \cdot Df)}$ for retained covariates. After exclusion, VIFs for AST, HCT, and PT decreased to 1.63, 1.34, and 1.83, indicating acceptable collinearity (threshold 5). Abbreviations: VIF: Variance inflation factor; AST: Aspartate aminotransferase; HCT: Hematocrit; PT: Prothrombin time; PTT: Partial thromboplastin time; TB: Total bilirubin; WBC: White blood cell count; PLT: Platelet count; BUN: Blood urea nitrogen; BG: Blood glucose; RR: Respiratory rate; CHF: Congestive heart failure; PVD: Peripheral vascular disease; HBP: High blood pressure; MV: Mechanical ventilation; GCS: Glasgow Coma Scale; SOFA: Sequential organ failure assessment.



Supplementary figure 3. The hazard ratios and confidence intervals of each confounding factor. Abbreviations: HR: Heart rate; RR: Respiratory rate; WBC: White blood cell count; PT: Prothrombin time; PTT: Partial thromboplastin time.