

SUPPLEMENTAL FIGURES AND TABLES

Mortality risk stratification using artificial intelligence-augmented electrocardiogram in cardiac intensive care unit patients

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Page 2: Supplemental Figure 1

Page 3: Supplemental Figure 2

Page 4: Supplemental Figure 3A

Page 5: Supplemental Figure 3B

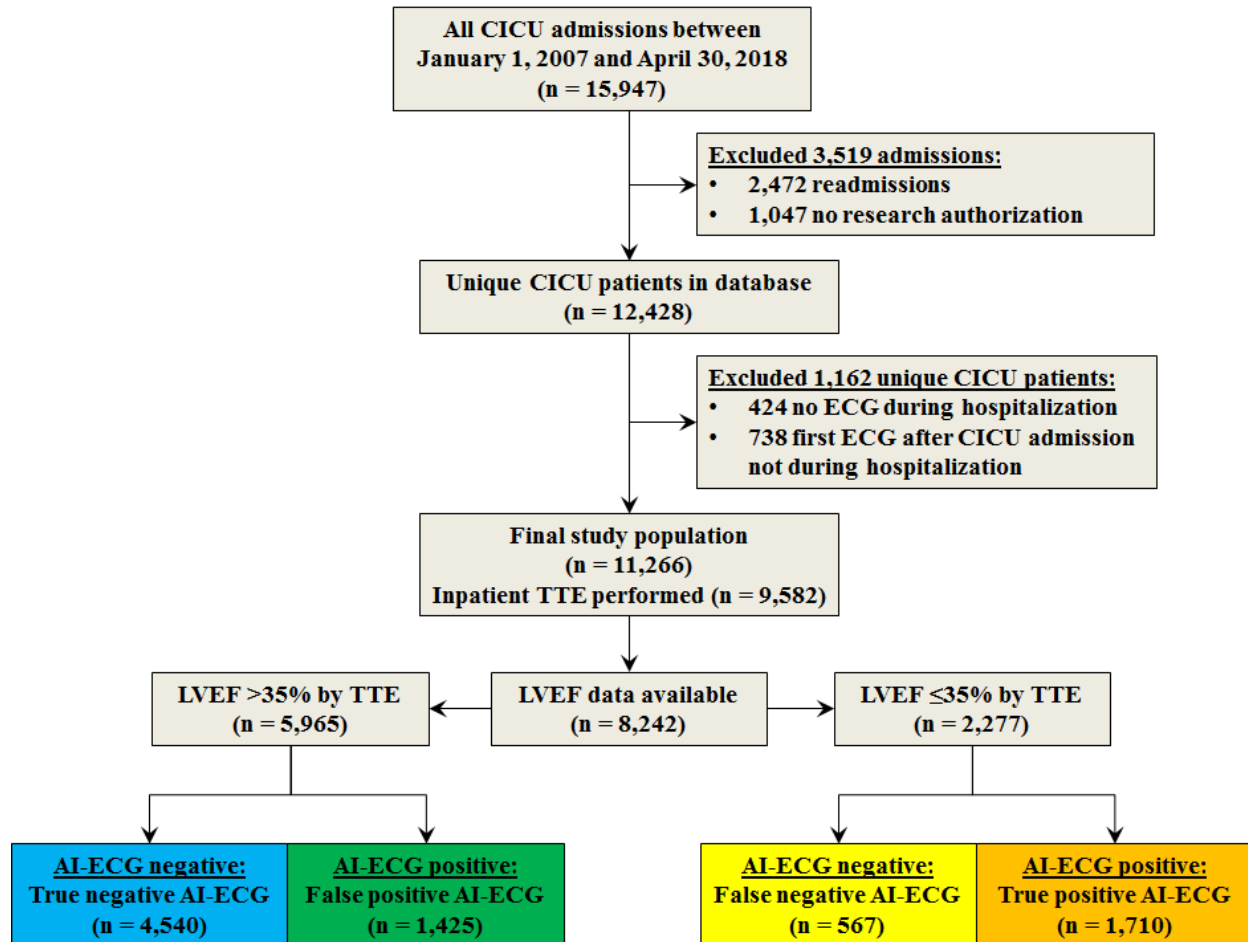
Page 6: Supplemental Figure 4

Page 7: Supplemental Table 1

Jentzer, et al. AI-ECG and Mortality in CICU

Supplemental Figure 1: Flow diagram demonstrating inclusion and exclusion criteria for the final study population.

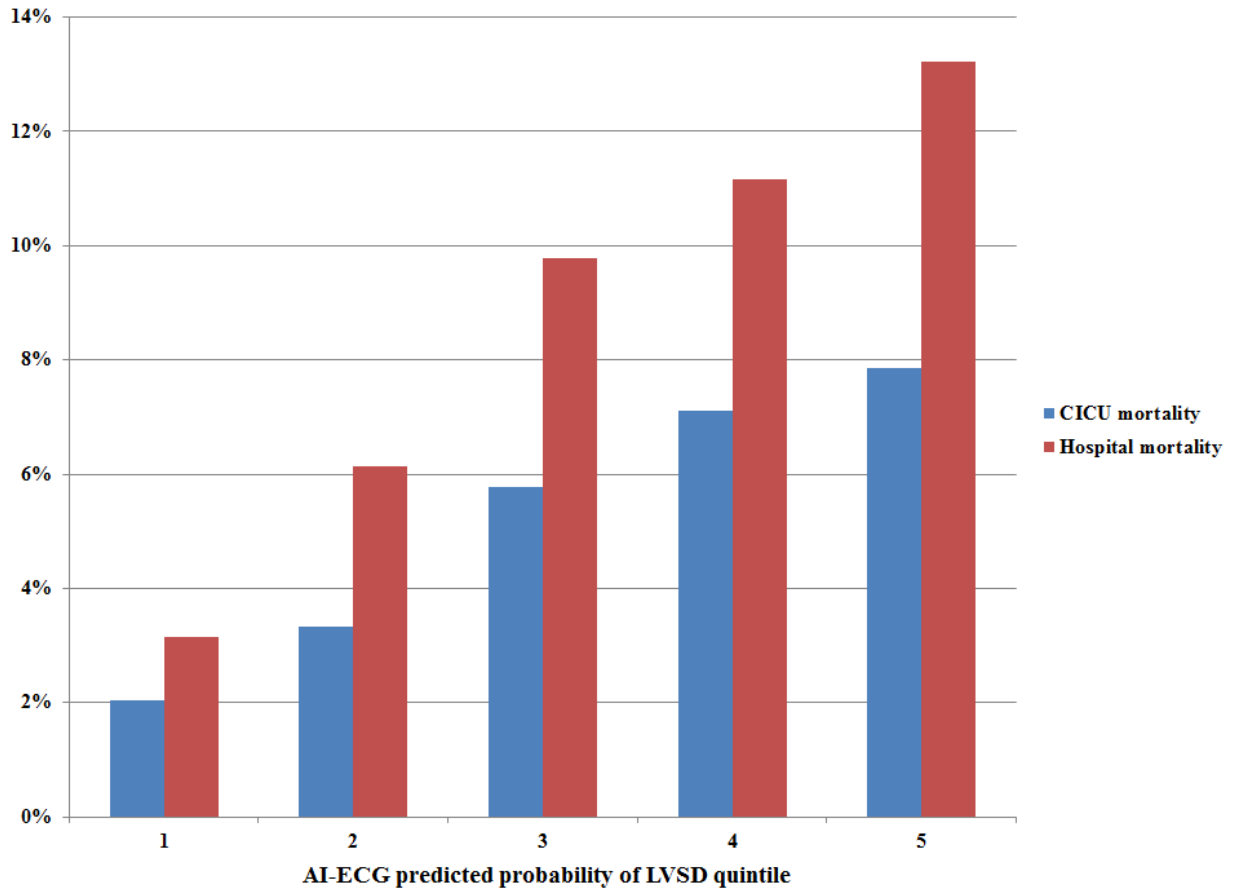
Abbreviations: AI-ECG, artificial intelligence-augmented electrocardiogram; CICU, cardiac intensive care unit; ECG, electrocardiogram; LVEF, left ventricular ejection fraction; TTE, transthoracic echocardiogram.



Jentzer, et al. AI-ECG and Mortality in CICU

Supplemental Figure 2: CICU and hospital mortality as a function the AI-ECG probability of LVSD quintile. P <0.001 for trends across categories.

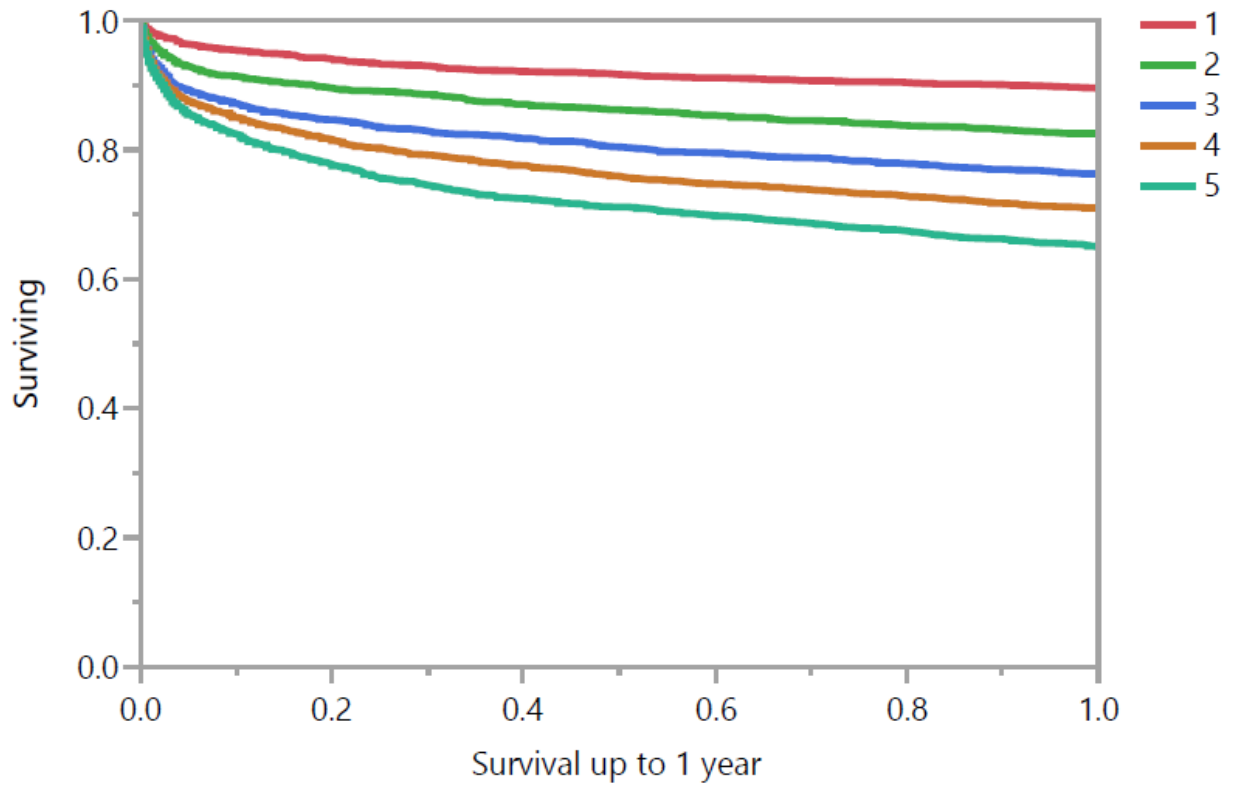
Abbreviations: AI-ECG, artificial intelligence-augmented electrocardiogram; CICU, cardiac intensive care unit; ECG, electrocardiogram; LVSD, left ventricular systolic dysfunction.



Jentzer, et al. AI-ECG and Mortality in CICU

Supplemental Figure 3A: Kaplan-Meier one-year survival curves for AI-ECG probability of LVSD quintiles. P <0.001 by log-rank.

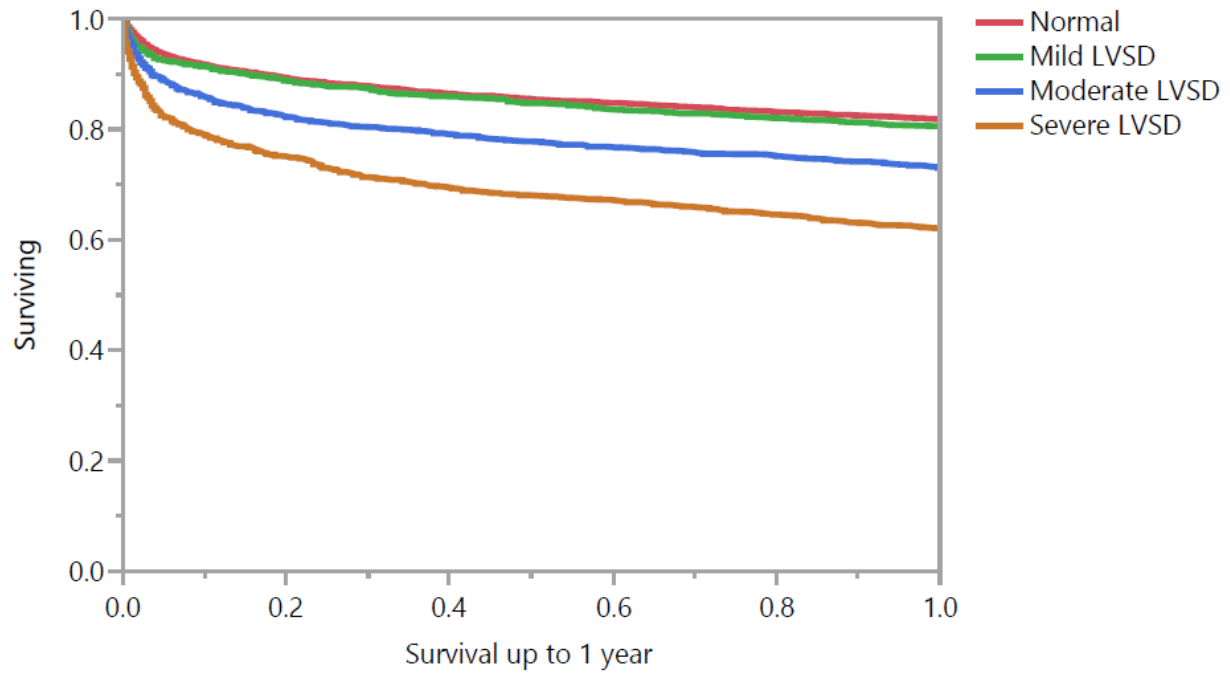
Abbreviations: AI-ECG, artificial intelligence-augmented electrocardiogram; LVSD, left ventricular systolic dysfunction.



Jentzer, et al. AI-ECG and Mortality in CICU

Supplemental Figure 3B: Kaplan-Meier one-year survival curves based on the presence and severity of LVSD on TTE using current ASE guidelines. $P < 0.001$ by log-rank.

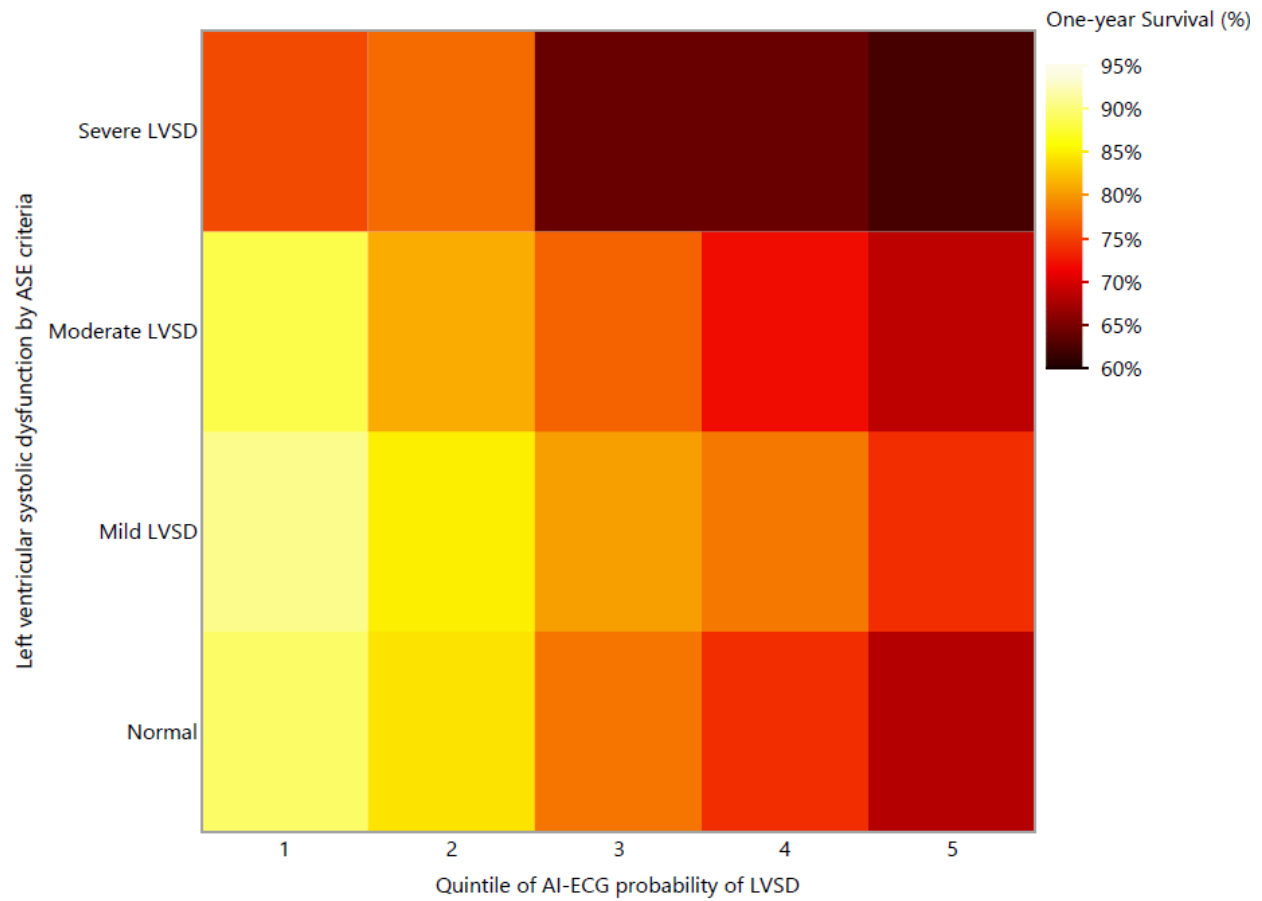
Abbreviations: ASE, American Society for Echocardiography; LVSD, left ventricular systolic dysfunction; TTE, transthoracic echocardiogram.



Jentzer, et al. AI-ECG and Mortality in CICU

Supplemental Figure 4: Heat map demonstrating one-year survival as a function of LVSD on TTE based on current ASE guidelines (Y axis) and AI-ECG probability of LVSD quintile (X axis). Darker colors represent a higher risk of one-year death.

Abbreviations: AI-ECG, artificial intelligence-augmented electrocardiogram; ASE, American Society for Echocardiography; LVSD, left ventricular systolic dysfunction; TTE, transthoracic echocardiogram.



Jentzer, et al. AI-ECG and Mortality in CICU

Supplemental Table 1: Predictors of adjusted hospital mortality on multivariable logistic regression among patients with an inpatient TTE. Data are displayed as adjusted unit odds ratio, 95% confidence interval and p value. The final model AUC was 0.902 for discrimination of hospital mortality.

Variable	Adjusted odds ratio	95% confidence interval	P value
<i>Demographics</i>			
Age (per 1 year older)	1.018	1.010-1.026	<0.0001
Female Sex	1.198	0.981-1.463	0.0759
White race	0.666	0.478-0.928	0.0164
Charlson Comorbidity Index (per 1 point)	1.041	1.004-1.079	0.0310
Prior dialysis	0.896	0.625-1.284	0.5494
<i>Admission diagnoses</i>			
Cardiac arrest	2.396	1.867-3.076	<0.0001
Shock	2.009	1.573-2.567	<0.0001
Sepsis	1.466	1.125-1.910	0.0047
Respiratory failure	1.833	1.425-2.360	<0.0001
Acute coronary syndrome	0.997	0.793-1.253	0.9789
Heart failure	0.835	0.656-1.063	0.1439
<i>Severity of illness</i>			
APACHE-III score (per 1 point)	1.017	1.012-1.021	<0.0001
Braden skin score (per 1 point)	0.875	0.845-0.906	<0.0001
<i>Procedures and therapies</i>			
Invasive ventilator	0.554	0.410-0.748	0.0001
Noninvasive ventilator	1.050	0.835-1.320	0.6770
Number of vasoactive drugs (per each)	1.378	1.257-1.512	<0.0001
Dialysis	3.016	1.990-4.571	<0.0001
CRRT	1.350	0.804-2.267	0.2563
Coronary angiography	0.540	0.431-0.677	<0.0001
PCI	0.763	0.590-0.985	0.0381
IABP	0.939	0.702-1.255	0.6684
PAC	0.810	0.608-1.080	0.1507
RBC transfusion	0.830	0.647-1.065	0.1424
CPR (in-hospital cardiac arrest)	3.265	2.210-4.824	<0.0001
<i>Assessment of cardiac function</i>			
LVEF by TTE (per each 5% higher)	0.958	0.926-0.992	0.0151
AI-ECG probability of LVSD (per 0.1 higher)	1.048	1.016-1.080	0.0027