Supplementary Table 1: Comparisons of clinical data of survival and non-survival patients with severe adult respiratory distress syndrome managed with extracorporeal membrane oxygenation.

Items	Non-survival (n=12)	Survival (n=18)	Statistics	P
Age (years)	49.5±20.5	41.4±20.7	0.741*	0.472
Male	10 (83.3)	16 (88.9)	0.096†	1.000
Body mass index (kg/m^2)	26.3±3.8	24.3±1.3	1.205*	0.275
APACHE Ⅱ score	34.5±7.3	28.4±10.7	1.202*	0.251
SOFA score	11.7±1.8	10.1±1.2	2.078*	0.058
Etiology of pneumonia	10 (83.3)	16 (88.9)	0.096†	1.000
Comorbidity				
Coronary heart disease	2 (16.7)	2 (11.1)	0.096†	1.000
Primary hypertension	6 (50.0)	2 (11.1)	2.784†	0.235
Diabetes mellitus	0 (0)	2 (11.1)	0.714†	1.000
Stroke	4 (33.3)	2 (11.1)	1.111†	0.525
Pre-ECMO CPR	4 (33.3)	0 (0)	3.462†	0.143
Prone positioning	4 (33.3)	6 (33.3)	0.000†	1.000
CRRT	12 (100.0)	12 (66.7)	2.500†	0.229
V-V ECMO	12 (100.0)	14 (77.8)	1.538†	0.486
Pre-ECMO NEmax (μg.kg^{-1}.min^{-1})	0.6 (0.4, 5.0)	0.5 (0.3, 2.8)	- 2.198‡	0.026
Heart rate (beat per minute)	126.7±38.0	94.6±41.2	1.523*	0.152
Mean blood pressure (mmHg)	80.9±9.9	79.4±17.5	0.190*	0.853
PaO$_2$/FiO$_2$ (mmHg) (ABG)	77.0±62.3	88.0±36.4	- 0.436*	0.670
Blood transfusion				
Albumin (g)	103.8 (37.5, 204.6)	112.5 (37.5, 199.5)	- 0.572‡	0.667
Fresh frozen plasma (ml)	0 (0, 1342.5)	0 (0, 1770)	- 0.642‡	0.667
Red blood cell (ml)	850 (300, 1925)	800 (0, 2000)	- 0.459‡	0.667
MV-ECMO (h)	24.0 (4.0, 120.0)	9.0 (3.0, 47.5)	- 1.771‡	0.088
ECMO-MV (h)	212.0 (120.5, 344.0)	187.0 (141.8, 222.5)	- 0.707‡	0.529
Length of ECMO support (h)	109.0 (78.0, 160.5)	97.0 (79.5, 144.8)	- 0.354‡	0.776
ICU stay (d)	12.0 (9.0, 22.0)	12.0 (10.0, 18.5)	- 0.236‡	0.864
Hospital stay (d)	24.0 (13.0, 30.0)	25.0 (14.0, 30.5)	- 1.004‡	0.328
Complications				
Replacement of oxygenator	4 (33.3)	0 (0)	6.923†	0.018
Systemic embolization	2 (16.7)	4 (22.2)	0.139†	1.000
Catheter-related infection	4 (33.3)	10 (55.6)	1.429†	0.284
Coagulation dysfunction	12 (100)	10 (55.6)	7.273†	0.010

| Multiple organ failure | 8 (66.7) | 4 (22.2) | 5.926† | 0.024 |

Data were presented as mean $\pm$ standard deviation, median (Q$_1$, Q$_3$), or n (%). $^*t$ values; $^\dagger\chi^2$ values; $^\ddagger U$ values. APACHE Ⅱ: Acute Physiology and Chronic Health Evaluation Ⅱ; SOFA: Sequential Organ Failure Assessment; ECMO: Extracorporeal membrane oxygenation; CPR: Cardiopulmonary resuscitation; CRRT: Continuous renal replacement treatment; V-V ECMO: Veno-Venous extracorporeal membrane oxygenation; Pre-ECMO NEmax: Maximal dose of norepinephrine before ECMO; PaO$_2$: Partial pressure of arterial oxygen; F$_i$O$_2$: Fraction of inspired oxygen; ABG: Arterial blood gas; MV: Mechanical ventilation; ICU: Intensive care unit.

Supplementary Table 2: Evolution of PiCCO data within the first week after PiCCO establishment in severe adult respiratory distress syndrome managed with extracorporeal membrane oxygenation.

Parameters	Group	T$_0$ (n=30)	T$_{24 h}$ (n=30)	T$_{48 h}$ (n=30)	T$_{72 h}$ (n=30)	T$_{1 w}$ (n=28)	F	P
PCCI	Non-survival	3.8$\pm$2.1	4.0$\pm$0.8	3.5$\pm$1.0	3.7$\pm$1.2	3.7$\pm$0.8	0.348	0.924
(L $\cdot$ min^{-1} $\cdot$ m^{-2})	Survival	4.1$\pm$1.5	4.4$\pm$1.8	3.4$\pm$0.9	4.1$\pm$1.1	3.4$\pm$0.8	1.783	0.217
SVI	Non-survival	38.5$\pm$18.4	40.7$\pm$8.3	41.1$\pm$16.1	44.4$\pm$15.8	38.7$\pm$15.8	0.357	0.944
(ml/m^2)	Survival	42.4$\pm$17.5	51.1$\pm$23.8	39.9$\pm$9.5	42.6$\pm$11.4	40.9$\pm$10.4	1.548	0.363
GEDI	Non-survival	778.3$\pm$179.6	865.3$\pm$301.6	753.0$\pm$31.2	819.3$\pm$82.6	815.3$\pm$54.3	0.378	0.938
(ml/m^2)	Survival	808.7$\pm$423.2	860.5$\pm$395.6	708.9$\pm$110.4	707.4$\pm$75.7	717.9$\pm$129.2	0.970	0.345
SVRI	Non-survival	2094.3$\pm$885.0	1538.3$\pm$203.6	1542.3$\pm$666.9	1728.0$\pm$891.2	2274.7$\pm$401.5	0.932	0.351
(dyn $\cdot$s $\cdot$m^2 $\cdot$cm^{-5})	Survival	1684.6$\pm$849.2	1418.4$\pm$401.1	1904.0$\pm$504.6	1775.0$\pm$474.4	1856.7$\pm$761.6	1.422	0.225
ELWI	Non-survival	17.7$\pm$4.5	16.7$\pm$6.4	17.0$\pm$6.9	17.3$\pm$4.5	14.3$\pm$4.0	0.554	0.669
(ml/kg)	Survival	17.1$\pm$5.6*†‡	13.7$\pm$6.7§	14.2$\pm$8.3$^\parallel$	10.7$\pm$3.7¶	9.1$\pm$2.9**	6.406	<0.001
PVPI	Non-survival	3.4$\pm$0.9	3.3$\pm$2.0	3.5$\pm$1.5	3.4$\pm$1.2	2.6$\pm$0.8	0.532	0.725
	Survival	2.8$\pm$1.2	2.3$\pm$1.2	2.8$\pm$1.2	2.3$\pm$0.6††	2.0$\pm$0.6‡‡	2.049	0.122

dPmx	Non-survival	1749.0±1173.9	1627.7±999.9	949.0±439.3	1183.7±566.8	1692.0±341.3	1.378	0.280
(mmHg/s)	Survival	1066.4±326.8	1299.1±424.0	1276.4±366.0	1476.5±724.2	1304.4±328.4	1.554	0.248
CFI	Non-survival	4.8±2.1	5.4±2.4	4.9±1.5	4.8±1.8	5.1±1.1	0.382	0.942
(/min)	Survival	5.1±1.7	5.0±1.3	5.1±1.5	5.8±1.3	5.7±1.4	2.011	0.169
CI	Non-survival	3.3±2.6	3.6±1.8	3.4±1.8	3.2±0.8	3.0±0.6	0.552	0.712
(L·min⁻¹·m⁻²)	Survival	3.3±1.5	3.8±2.7	3.7±3.1	3.5±1.0	3.6±0.9	0.502	0.765

Data were presented as mean $\pm$ standard deviation. ELWI: $^{*}P<0.05$, compared with $T_{24\,h}$, $^{\dagger}P<0.05$, compared with $T_{72\,h}$, $^{\ddagger}P<0.05$, compared with $T_{1\,w}$ (intra-group comparison). $^{\S}P<0.05$, compared with $T_{1\,w}$, $^{\parallel}P<0.05$, compared with $T_{1\,w}$ (intra-group comparison). $^{\P}P<0.05$, compared with $T_{72\,h}$ of the non-survival group, $^{**}P<0.05$, compared with $T_{1\,w}$ of the non-survival group (inter-group comparison). PVPI: $^{\dagger\dagger}P<0.05$, compared with $T_{72\,h}$ of the non-survival group, $^{\ddagger\ddagger}P<0.05$, compared with $T_{1\,w}$ of the non-survival group (inter-group comparison). PiCCO: Pulse index continuous cardiac output; PCCI: Pulse contour continuous cardiac index; SVI: Stroke volume index; GEDI: Global end-diastolic volume index; SVRI: Systemic vascular resistance index; ELWI: Extravascular lung water index; PVPI: Pulmonary vascular permeability index; dPmx: Maximum rate of the increase in left ventricle pressure; CFI: Cardiac function index; CI: Cardiac index. Normal range of variables: PCCI, 3.0–5.0 L·min⁻¹·m⁻²; SVI, 40–60 ml/m²; GEDI, 680–800 ml/m²; SVRI, 1700–2400 dyn·s·m²·cm⁻⁵; ELWI, <7 ml/kg; PVPI, 1.0–3.0; dPmx, 1200–2000 mmHg/sec; CFI, 4.5–6.5/min; CI, 3.0–3.5 L·min⁻¹·m⁻².

Supplementary **Table 3: ROC analysis of the ELWI value at predefined time points (T_0-T_{1w}), APACHE Ⅱ and SOFA scores for predicting survival to discharge.**

Predicted model	AUC	*P* values	95% CI	Cutoff	Sensitivity	Specificity
APACHE Ⅱ	0.600	0.612	0.257－0.943	-	-	-
SOFA	0.533	0.866	0.192－0.875	-	-	-
ELWI (T_0) (ml/kg)	0.533	0.866	0.114－0.952	-	-	-
ELWI (T_{24h}) (ml/kg)	0.633	0.499	0.302－0.965	-	-	-
ELWI (T_{48h}) (ml/kg)	0.667	0.398	0.358－0.976	-	-	-
ELWI (T_{72h}) (ml/kg)	0.900	0.043	0.699－1.101	12.5	100%	70%
ELWI (T_{1w}) (ml/kg)	0.883	0.052	0.658－1.109	14.5	66.7%	100%

ROC: Receiver operating characteristic; ELWI: Extravascular lung water index; APACHE Ⅱ: Acute Physiology and Chronic Health Evaluation Ⅱ; SOFA: Sequential Organ Failure Assessment; AUC: Area under curve; CI: Confidence interval.