Supplementary table S1. Characteristics of participating centers

Characteristics	No. of hospitals
Number of hospital beds	
< 500 beds	1 (6.3%)
500-1000 beds	9 (56.3%)
1001-1500 beds	3 (18.8%)
> 1500 beds	3 (18.8%)
Number of ICU beds	
< 50 beds	5 (31.3%)
51-100 beds	9 (56.3%)
> 100 beds	2 (12.5%)
ICU patient-to-intensivist ratios	
< 10 beds	1 (6.3%)
10-20 beds	11 (68.8%)
21-30 beds	1 (6.3%)
> 30 beds	3 (18.8%)
Lung transplantation center	5 (31.3%)

ICU, intensive care unit.

Supplementary table S2. Hospital mortality by centers

Participating center	Short-term group (n=411)	Long-term group (n=76)	*P*-value
A	51/92 (55.4%)	4/9 (44.4%)	0.728
B	1/3 (33.3%)	0/0 (0.0%)	-
C	4/4 (100.0%)	0/0 (0.0%)	-
D	27/54 (50.0%)	10/16 (62.5%)	0.379
E	29/40 (72.5%)	7/8 (87.5%)	0.659
F	1/4 (25.0%)	0/0 (0.0%)	-
G	68/99 (68.7%)	11/18 (61.1%)	0.528
H	24/34 (70.6%)	11/15 (73.3%)	>0.999
I	4.5/10 (40.0%)	0.5/1 (100.0%)	0.455
J	5/6 (83.3%)	0/0 (0.0%)	-
K	3/6 (50.0%)	2/2 (100.0%)	0.464
L	11/12 (91.7%)	0/0 (0.0%)	-
M	1/1 (100.0%)	1/1 (100.0%)	-
N	12/36 (33.3%)	3/3 (100.0%)	0.05
O	8/8 (100.0%)	3/3 (100.0%)	-
P	1/2 (50.0%)	0/0 (0.0%)	-

Supplementary table S3. Hospital mortality by time period

Year	Short-term group (n=411)	Long-term group (n=76)	*P*-value
2012	68/98 (69.4%)	4/6 (66.7%)	>0.999
2013	54/82 (65.9%)	13/18 (72.2%)	0.603
2014	57/115 (49.6%)	9/16 (56.3%)	0.616
2015	71/116 (61.2%)	27/36 (75.0%)	0.131

Supplementary table S4. Hospital mortality by lactate clearance 4 hours after cannulation

Lactate clearance	Short-term group (n=139)	Long-term group (n=21)	*P*-value
Lactate level < 2 mmol/L before and after cannulation	8/27 (29.6%)	2/6 (33.3%)	>0.009
Increased lactate level after cannulation	57/78 (73.1%)	7/9 (77.8%)	>0.009
Lactate level ≥ 2 mmol/L before cannulation and lactate clearance < 50% after cannulation	15/25 (60.0%)	3/5 (60.0%)	>0.009
Lactate level ≥ 2 mmol/L before cannulation and lactate clearance >50% after cannulation	6/9 (66.7%)	1/1 (100.0%)	>0.009

Supplementary table S5. Comparison between survivors and non-survivors

Characteristics	Survivor (n=184)	Non-survivor (n=303)	*P*-value
Age, years	51 (37-62)	61 (52-69)	<0.001
Male	128 (69.6)	193 (63.7)	0.185
Primary diagnosis			0.002
Viral pneumonia	20 (10.9)	23 (7.6)	
Bacterial pneumonia	34 (18.5)	80 (26.4)	
Asthma/COPD	4 (2.2)	3 (1.0)	
Trauma/Burn	17 (9.2)	7 (2.3)	
Asphyxia	0 (0.0)	4 (1.3)	
Interstitial lung disease	12 (6.5)	36 (11.9)	
Chronic respiratory failure	7 (3.8)	14 (4.6)	
Other respiratory failure	90 (48.9)	136 (44.9)	
SOFA scores before ECMO	10 (7-13)	12 (9-15)	0.001
RESP scores	1 (0-3)	-1 (-2-2)	<0.001
PRESERVE scores	4 (3-6)	6 (4-7)	<0.001

MV before ECMO			
Duration of MV, days	1 (0-4)	2 (0-7)	0.001
MV settings			
FiO_2, %	1.0 (0.8-1.0)	1.0 (0.9-1.0)	0.295
PEEP, cmH_2O	10 (6-12)	10 (6-11)	0.273
Peak inspiratory pressure, cmH_2O	26 (23-30)	30 (25-34)	<0.001
Minute ventilation, L/min	9.4 (6.7-12.7)	9.7 (7.6-12.4)	0.352
Arterial blood gas before ECMO			
pH	7.27 (7.18-7.37)	7.28 (7.16-7.38)	0.783
$PaCO_2$, mmHg	48.0 (38.0-64.0)	52.0 (39.0-66.0)	0.136
PaO_2, mmHg	64.0 (51.0-76.0)	61.0 (51.2-76.0)	0.606
HCO_3, mmol/L	22.1 (18.0-28.8)	23.1 (19.2-28.1)	0.319
SaO_2, %	89.0 (79.9-93.4)	88.0 (78.7-92.7)	0.183
Laboratory variables before ECMO			
C-reactive protein, mg/dL	10.7 (2.6-19.8)	12.0 (5.9-23.0)	0.074
Hemoglobin, g/dL	11.3 (9.3-13.2)	10.2 (8.8-12.0)	<0.001
Platelets, $10^3/mm^3$	166 (107-253)	129 (70-208)	<0.001
Total bilirubin, mg/dL	0.8 (0.5-1.4)	0.9 (0.5-2.2)	0.211
AST, IU/L	48 (30-92)	48 (30-118)	0.601
ALT, IU/L	29 (15-62)	35 (17-84)	0.601
BUN, mg/dL	18 (13-30)	26 (17-36)	<0.001
Creatinine, mg/dL	1.00 (0.69-1.53)	0.96 (0.67-1.54)	0.583
LDH, IU/L	623 (407-940)	770 (450-1200)	0.049
Lactate, mmol/L	1.8 (1.2-4.6)	2.9 (1.7-6.3)	0.002
Initial mode of ECMO			0.049
Veno-venous	169 (91.9)	256 (84.5)	
Veno-arterial	10 (5.4)	36 (11.9)	
Others*	5 (2.7)	11 (3.6)	
Duration of ECMO support, days	7 (3-14)	9 (4-23)	0.011

Values are given as the median (interquartile range) or n (%).

* Others include veno-venous-arterial, veno-veno-venous-arterial, and veno-arteriovenous.

ALT, alanine aminotransferase; AST, aspartate transaminase; BUN, blood urea nitrogen; COPD, chronic obstructive pulmonary disease; ECMO, extracorporeal membrane oxygenation; FiO_2, fraction of inspired oxygen; LDH, lactate dehydrogenase; MV, mechanical ventilation; $PaCO_2$, partial pressure of carbon dioxide in arterial blood; PaO_2, partial pressure of oxygen in arterial blood; PEEP, positive end-expiratory pressure; PRESERVE, predicting death for severe ARDS on VV-ECMO; RESP, respiratory extracorporeal membrane oxygenation survival prediction; SaO_2, arterial oxygen saturations; SOFA, sequential organ failure assessment.