Table S4 – Characteristics of patients with intracranial hemorrhage

	No COVID-19 (n=26)	COVID-19 (n=17)
Demographic and clinical characteristics		
Age, years	55 (46-61)	58 (51-65)
Gender, (female)	9 (34.6)	6 (35.3)
Body Mass index	25.1 (21.4-30.8)	31.9 (26.1-35.1)
Charlson Comorbidity Index	3 (1-4)	2 (1-2)
SOFA on admission	12 (9-14)	10 (8-12)
SAPS II on admission	40 (36-52)	42 (36-50)
Anticoagulation or coagulopathy before ECMO		
no	20 (76.9)	13 (76.5)
yes	6 (23.1)	3 (17.6)
unknown	0 (0.0)	1 (5.9)
ASS before ECMO	5 (19.2)	2 (11.8)
Platelet inhibitor before ECMO		
no	25 (96.2)	17 (100)
clopidogrel	0 (0.0)	0 (0.0)
prasugrel	1 (3.8)	0 (0.0)
ticagrelor	0 (0.0)	0 (0.0)
Duration of mechanical ventilation, days	13 (8-24)	16 (9-30)
Nitric oxide	15 (57.7)	10 (58.8)
RRT	20 (76.9)	9 (52.9)
RRT duration, days	11 (4-20)	1 (0-16)
Device		
venovenous ECMO	21 (80.8)	15 (88.2)
iLA activve® (pump assisted)	5 (19.2)	2 (11.8)
Minimum cannula size	17 (17-19)	17 (17-19)
Maximum cannula size	24 (23-25)	24 (24-25)
Days from ICU admission to ICRH	10 (6-18)	9 (1-17)
Days from ECMO start to ICRH	7 (3-13)	6 (3-11)
ICU mortality	21 (80.8)	15 (88.2)
Blood gas analyses before and after ECMO start		
PaO_2 before ECMO, mmHg	75 (66-87)	70 (64-79)
$PaCO_2$ before ECMO, mmHg	67 (57-86)	63 (57-82)
pH before ECMO	7.27 (7.15-7.35)	7.27 (7.19-7.39)
HCO_3^- before ECMO, mmol/L	26 (24-28)	29 (23-32)
Lactate before ECMO, mmol/L	3 (1-5)	3 (2-3)
Hemoglobin before ECMO, mg/dL	10 (9-12)	9 (8-12)

Glucose before ECMO, mg/dL	147 (120-156)	145 (126-185)
1st PaO_2 after ECMO start, mmHg	83 (63-104)	78 (70-91)
1st $PaCO_2$ after ECMO start, mmHg	54 (47-61)	52 (45-61)
1st pH after ECMO start	7.33 (7.25-7.42)	7.37 (7.26-7.45)
1st HCO_3^- after ECMO start, mmol/L	27 (24-30)	29 (24-33)
1st lactate after ECMO start, mmol/L	3 (1-5)	4 (2-5)
1st hemoglobin after ECMO start, mg/dL	9 (8-10)	9 (8-11)
1st glucose after ECMO start, mg/Dl	128 (105-157)	152 (136-199)
2nd PaO_2 after ECMO start, mmHg	65 (55-87)	78 (71-92)
2nd $PaCO_2$ after ECMO start, mmHg	49 (44-62)	53 (46-63)
2nd pH after ECMO start	7.34 (7.31-7.44)	7.37 (7.30-7.42)
2nd HCO_3^- after ECMO start, mmol/L	26.5 (25.1-30.4)	28.9 (24.5-31.9)
2nd lactate after ECMO start, mmol/L	3.1 (1.5-4.9)	3.7 (1.9-4.8)
2nd hemoglobin after ECMO start, mg/dL	9.4 (8.5-10)	9.1 (8.2-11.1)
2nd glucose after ECMO start, mg/dL	133 (91-180)	143 (124-200)
3rd PaO_2 after ECMO start, mmHg	70 (64-79)	79 (71-97)
3rd $PaCO_2$ after ECMO start, mmHg	48 (44-53)	51 (45-58)
3rd pH after ECMO start	7.36 (7.28-7.41)	7.37 (7.28-7.42)
3rd HCO_3^- after ECMO start, mmol/L	26.4 (22.2-29.9)	28.4 (24.4-30.5)
3rd lactate after ECMO start, mmol/L	3.1 (2-6.2)	3.7 (1.8-5.6)
3rd hemoglobin after ECMO start, mg/dL	9.8 (8.8-10.6)	9.3 (8.9-11.4)
3rd glucose after ECMO start, mg/dL	145 (114-171)	146 (115-202)
PaO_2 24 h after ECMO start, mmHg	73 (61-86)	68 (66-83)
$PaCO_2$ 24 h after ECMO start, mmHg	49 (42-52)	49 (45-57)
pH 24 h after ECMO start	7.41 (7.36-7.46)	7.40 (7.36-7.44)
HCO_3^- 24 h after ECMO start, mmol/L	28.4 (25.4-30.1)	29.6 (27.9-31.4)
Lactate 24 h after ECMO start, mmol/L	2.0 (1.2-3.6)	1.9 (1.3-2.2)
Hemoglobin 24 h after ECMO start, mg/dL	10.2 (9.7-10.9)	10.5 (8.9-11.0)
Glucose 24 h after ECMO start, mg/dL	154 (119-173)	152 (118-184)
Parameters at time of intracranial hemorrhage		
SAPS II	49 (38-54)	46 (39-47)
Pump speed, rpm	3535 (3155-4614)	4151 (3465-4698)
Blood flow, L/min	4.10 (3.60-4.75)	4.80 (4.15-5.44)
Sweep gas flow, L/min	4.0 (3.0-6.0)	4.8 (3.5-6.0)
SBP 1, mmHg	124.5 (114-135)	124.5 (117-141)
DBP 1, mmHg	56.5 (49-66)	60.5 (55.5-63.5)
MAP 1, mmHg	82.0 (69.0-90.0)	81.5 (74.5-87.5)
SBP 2, mmHg	120.0 (102-135.0)	119.0 (111.5-133.0)
DBP 2, mmHg	55.5 (47.0-61.0)	56.0 (52.0-61.5)

MAP 2, mmHg	75.5 (62.0-83.0)	74.5 (71.5-85)
SBP 3, mmHg	124.5 (104.0-138.0)	111.5 (107.0-131.5)
DBP 3, mmHg	55.5 (47.0-62.0)	55.5 (50.0-61.0)
MAP 3, mmHg	76.5 (64.0-82.0)	75.0 (67.0-81.0)
aPTT, sec	49.6 (43.1-59.5)	54 (47-61)
Fibrinogen, g/L	4.70 (3.66-4.97)	4.72 (3.75-5.44)
Platelets, 10^9/L	102.5 (61-161)	124 (88-136)
Quick, %	84 (64-98)	94 (70-99)
Antithrombin III activity, %	80 (56-97)	86 (65-103)
Highest carboxyhemoglobin until ICRH	2.95 (2.10-3.50)	3.20 (2.70-3.90)
Lowest ATIII until ICRH	63.8 (48.0-73.5)	70.0 (63.0-86.0)
Highest aPTT until ICRH	102.8 (81.0-160.1)	105.0 (72.0-151.0)
Lowest fibrinogen until ICRH	3.23 (2.0-4.22)	4.01 (3.64-4.87)
Lowest quick until ICRH	52 (36-69)	65 (54-90)
Lowest platelets until ICRH	70 (54-104)	86 (61-115)
PaO_2 before ICRH 1, mmHg	70.9 (61.5-81.4)	72.9 (67.6-87.8)
$PaCO_2$ before ICRH 1, mmHg	47.7 (41.5-54.8)	46.9 (43.8-52.1)
pH before ICRH 1	7.40 (7.35-7.50)	7.44 (7.38-7.47)
HCO_3^- before ICRH 1, mmol/L	28.4 (27.0-30.6)	31 (24.9-33.8)
Lactate before ICRH 1, mmol/L	1.4 (1.0-2.1)	1.3 (1.0-1.91)
Hemoglobin before ICRH 1, g/dL	9.7 (9.3-10.5)	10.1 (8.9-10.4)
Glucose before ICRH 1, mg/dL	146.0 (123.0-159.0)	145.5 (134.0-159.5)
PaO_2 before ICRH 2, mmHg	72.9 (59.4-90.6)	76.4 (65.5-86.1)
$PaCO_2$ before ICRH 2, mmHg	46.2 (42.7-53.2)	47 (44.1-51.8)
PH before ICRH 2	7.41 (7.36-7.48)	7.43 (7.36-7.48)
HCO_3^- before ICRH 2, mmol/L	28.7 (27.0-30.4)	30.0 (24.9-33.0)
Lactate before ICRH 2, mmol/L	1.4 (1.0-2.3)	1.3 (0.9-1.7)
Hemoglobin before ICRH 2, g/dL	9.8 (9.2-10.9)	9.7 (8.8-10.3)
Glucose before ICRH 2, mg/dL	144.0 (123.0-160.0)	154.5 (133.0-174.5)
PaO_2 before ICRH 3, mmHg	77.4 (60.5-88.7)	72.1 (66.8-78.6)
$PaCO_2$ before ICRH 3, mmHg	46.4 (42.1-54.5)	48.1 (43.5-51.4)
pH before ICRH 3	7.42 (7.35-7.50)	7.42 (7.36-7.48)
HCO_3^- before ICRH 3, mmol/L	28.8 (26.8-30.6)	30.0 (25.6-34.4)
Lactate before ICRH 3, mmol/L	1.3 (1.1-2.3)	1.3 (0.9-1.7)
Hemoglobin before ICRH 3, g/dL	9.9 (8.8-10.8)	9.9 (8.9-10.4)
Glucose before ICRH 3, mg/dL	144.0 (129.0-160.0)	130.5 (116.0-161.0)

Table S4: Demographic and clinical characteristics, blood gas analyses before and after ECMO start of patients with intracranial hemorrhage stratified by the presence of COVID-19. Vital signs, blood gas analyses, settings of extracorporeal membrane oxygenation (ECMO), and coagulation parameters at the time of diagnosis of intracranial hemorrhage (ICRH). Data are presented as n (%) or median with 25th and 75th percentiles. "Before ECMO" refers to the final blood gas analysis before extracorporeal membrane oxygenation (ECMO) implantation. 1st, 2nd, and 3rd blood gas analyses refer to the first three analyses after ECMO start. Blood pressure values refer to the last three measurements before the diagnosis of ICRH. Blood gas analyses refer to the last three analyses before the diagnosis of ICRH. ECMO: extracorporeal membrane oxygenation. SAPS II: Simplified Acute Physiology Score. SOFA: Sequential organ Failure Assessment. ASS: acetylsalicylic acid. RRT: renal replacement therapy. ICU: intensive care unit. PaO_2: arterial partial pressure of oxygen. $PaCO_2$: arterial partial pressure of carbon dioxide. HCO_3^-: bicarbonate. SBP: systolic blood pressure. DBP: diastolic blood pressure. MAP: mean arterial pressure. aPTT: Activated Partial Thromboplastin Time.