

Supplementary material

Supplementary Table 1 Comparison of characteristics of the first week of intensive care unit stay between two studied groups

Parameter	First day			Third day			Fifth day			Seventh day		
	Died (n = 13)	Alive (n = 38)	P value	Died (n = 11)	Alive (n = 32)	P value	Died (n = 11)	Alive (n = 23)	P value	Died (n = 11)	Alive (n = 15)	P value
Clinical and instrumental findings												
Maximum temperature, °C	38 (36.5; 38.6)	38.2 (37.6; 39.0)	0.475	37.3 (36.6; 37.6)	37.2 (36.8; 37.9)	0.955	37.7 (36.8; 37.8)	37 (36.7; 37.5)	0.298	37 (36.7; 38.1)	37.2 (36.9; 37.5)	0.775
Respiratory rate per minute	30 (24; 46)	28 (22; 40)	0.463	23 (20; 30)	26 (20; 30)	0.632	20 (18; 30)	24 (20; 26)	0.259	22 (20; 24)	25 (22; 28)	0.249
Heart rate per minute - maximum	125 (107; 157)	120 (100; 135)	0.499	115 (100; 135)	100 (90; 120)	0.086	118 (110; 130)	90 (80; 110)	0.016	124 (110; 130)	95 (80; 112.5)	0.008
Arterial hypotension, n (%)	4/12 (33.3)	15/37 (40.5)	0.870	1 (9.1)	3 (9.4)	0.978	2 (18.2)	2 (8.7)	0.870	1/10 (10)	2/12 (16.7)	0.123
Hepatomegaly, n (%)	12 (92.3)	33/37 (89.2)	0.747	8 (72.7)	26 (81.3)	0.549	8 (72.7)	18 (78.3)	0.747	7/9 (77.8)	11/13 (84.6)	0.683

Splenomegaly, n (%)	4 (30.8)	10/37 (27)	0.796	3 (27.3)	7 (21.9)	0.715	3 (27.3)	5 (21.7)	0.796	3/9 (33.3)	3/13 (23.1)	0.595
Diuresis, ml/kg/hour	1.1 (0.6; 1.5)	1.9 (1.2; 2.7)	0.015	2 (0.95; 2.6)	1.8 (1.3; 2.7)	0.717	1.8 (1; 2.7)	1.7 (1.4; 2.8)	0.684	50 (50; 70)	95 (82; 115)	0.619
Hydrobalance, %	50 (40; 70)	76 (45; 114)	0.026	83 (55; 109)	75 (69; 95)	0.748	88 (70; 96)	85 (80; 100)	0.601	2.3 (1.4; 3)	2.4 (1.5; 3.15)	0.405
SpO2 % min	92 (85.5; 96)	95 (93; 97)	0.066	95 (92; 97)	96 (95; 97)	0.233						
SpO2 % max	96 (94; 99.5)	98 (97; 99)	0.197	98 (95; 99)	98 (98; 99)	0.170	97.5 (95; 99)	98 (97.5; 98.5)	0.634	98 (96; 98)	98 (98; 99)	0.431
Atmospheric air saturation	87 (78; 90)	95 (89; 98)	0.018	92 (85; 99)	97 (91; 98)	0.899	90 (87.5; 94.5)	97.5 (95; 98)	0.181	89 (87; 99)	97 (96.5; 98)	0.389
Laboratory data												
Leukocytes, 10 ⁹ /L	5.1 (1.1; 16.3)	16.3 (9.9; 20.8)	0.015	2.8 (1.4; 11.2)	14.4 (9.7; 20.9)	0.004	8.1 (2.3; 14.5)	13.1 (7.3; 20.5)	0.241	4.7 (1.6; 9.9)	11.9 (8.1; 16.6)	0.100
Platelets, 10 ⁹ /L	87 (43.5; 133.5)	213 (124; 414)	0.001	59 (30; 113)	211 (101; 359)	0.001	38 (13; 212)	194 (100; 254)	0.059	73 (33; 286)	210 (167; 250)	0.100

Hemoglobin, g/l	84 (66; 114)	99 (83; 113)	0.24	85 (80; 87)	98 (90; 114)	0.014	87 (71; 92)	95 (81; 104)	0.194	84 (76; 86)	87 (85; 101)	0.172
ESR, mm/h	26 (20; 42)	29 (12; 50)	0.659	20 (16; 53)	21.5 (10.5; 50)	0.686	28 (26; 70)	25 (8; 45)	0.467	20.5 (5; 37.5)	25 (5; 60)	0.735
Na ⁺ , mmol/L	133 (127; 137)	136 (131; 138)	0.142	136 (134.8; 140)	136 (134; 138)	0.527	137.5 (134.2; 144)	135.9 (134; 138)	0.381	136.5 (135; 138.3)	137 (134; 139.3)	0.827
K ⁺ , mmol/L	4.9 (3.9; 5.6)	4.0 (3.8; 4.4)	0.025	4.1 (3.8; 5.3)	4.3 (3.8; 4.6)	1.000	4.1 (3.4; 5.2)	4.2 (3.8; 4.4)	0.967	4.7 (3.8; 4.8)	4.2 (4.2; 4.6)	0.569
Phosphate, mmol/L	1.5 (1.2; 1.5)	1.4 (1.1; 1.7)	0.927	1.7 (1.1; 2.6)	1.1 (0.9; 1.2)	0.154	1 (0.98; 1.9)	1.2 (0.8; 1.5)	0.944	1.2 (0.4; 1.9)	1.1 (0.9; 1.4)	0.735
C-reactive protein, mg/l	110.5 (81.5; 213)	118.3 (36.9; 201.8)	0.506	150.5 (68; 194)	49.7 (12; 122.7)	0.025	69.3 (58.8; 196.5)	16.5 (14.3; 27.3)	0.001	47 (26.4; 162.3)	12 (3; 15.4)	0.001
Procalcitonin, ng/mL	10 (10; 10)	2 (2; 10)	0.307	2 (2; 10)	2 (0.5; 10)	1.000	2 (0.5 2)	0.5 (0.4; 2)	0.366	2 (0.4; 10)	0.5 (0.4; 2)	0.653
LDH, U/L	766 (328; 1107)	653 (370; 1503)	0.759	1119 (524; 1709)	462 (319; 703)	0.290	962 (255; 345)	491 (345; 611)	0.443	487.5 (217; 5322)	506 (274; 581)	0.773

Ferritin, µg/L	2264 (1057; 4116)	1034 (314; 1696)	0.221	1582 (522; 4173)	457 (190; 1500)	0.149	923 (288; 5203)	483 (288; 973.3)	0.405	1720 (903; 4324)	487 (294; 921)	0.256
ALT, U/L	45 (29.2; 65.8)	38.9 (26.4; 57.1)	0.528	32 (23.3; 70.4)	36.2 (19.6; 57.1)	0.893	37.9 (18.4; 95.9)	45 (32.6; 67)	0.946	33.3 (18.8; 90.6)	39.8 (20; 59.7)	0.975
AST, U/L	49.5 (20; 144.2)	58.2 (28.5; 131.6)	0.784	27 (15; 188)	37.1 (20.9; 73.2)	0.780	35.95 (23;195.4)	40.7 (25.7; 53)	0.964	42 (28; 103)	32.6 (20.; 40)	0.182
Triglycerides, mmol/L	2.5 (2; 4.2)	2 (1.4; 4.4)	0.673	4.4 (2.6; 6.6)	1.7 (1.4; 2.5)	0.050	4.5 (2.9; 6.1)	2.2 (1.1; 2.8)	0.043	2.1 (1.2; 3.4)	2.8 (1.9; 4.2)	0.523
Albumin, g/l	24 (19; 30)	30.7 (27; 35.3)	0.009	27.8 (25; 28)	32.9 (31; 35)	0.028	29.9 (26.1; 32)	31.6 (28; 35.3)	0.232	30 (27; 35)	36 (34; 36.9)	0.013
Total protein, g/l	58 (47.9; 60.5)	57 (51; 62.8)	0.550	54.4 (47.8; 59)	57 (51; 63.6)	0.319	55 (49; 60)	61 (52.5; 68.4)	0.137	50 (46; 54)	64 (61.1; 69)	0.013
Creatinine, µmol/L	131 (77.5; 188.5)	50.8 (38; 121.9)	0.021	91 (66; 277.7)	45.3 (32.5; 74)	0.028	80 (77; 208)	48.6 (38; 65)	0.023	113.5 (67; 166)	51 (38; 73.3)	0.114

Bilirubin, μmol/L	13.8 (4.7; 25.7)	10.1 (6.6; 15.7)	0.660	13 (8.3; 20)	7.2 (4.6; 12.3)	0.104	15.5 (7.8; 20.6)	9 (6.1; 12.4)	0.127	19.9 (8.7; 29.6)	9.1 (5.4; 13.2)	0.032
Prothrombin, %	70.4 (37.5; 85.4)	74 (60.6; 84.2)	0.311	78 (62.5; 96.5)	82.6 (72.1; 97)	0.714	82.9 (60.6; 91)	86.2 (75.3; 99)	0.371	85 (73.1; 101)	75.3 (69; 92)	0.385
D-dimer, mg/L	9.1 (5.4; 11.5)	6.2 (2.1; 13.3)	0.692	2.9 (1.7; 4.5)	3.5 (1.9; 8.1)	0.747	2.2 (1.3; 6.1)	3.8 (2; 8.1)	0.193	4 (1.8; 5.5)	4.1 (2.5; 6.5)	0.799
Fibrinogen, g/l	4.4 (3.2; 7.9)	3.1 (1.8; 6.1)	0.178	4.6 (2.3; 6.5)	2.5 (1.9; 5.1)	0.224	4.5 (3.6; 6.1)	1.8 (1.2; 2.6)	0.001	3.4 (2; 4.4)	1.3 (1.3; 2.6)	0.015
Acid-base state												
pH	7.4 (7.3; 7.4)	7.4 (7.4; 7.5)	0.026	7.38 (7.33; 7.44)	7.45 (7.43; 7.48)	0.031	7.41 (7.35; 7.41)	7.43 (7.4; 7.46)	0.097	7.39 (7.36; 7.48)	7.43 (7.41; 7.46)	0.416
pCO2 mmHg	35.7 (26.1; 38.2)	34.1 (30.1; 39)	0.68	37.3 (35.5; 38)	35.4 (33; 40.2)	0.372	43.1 (35; 49)	39 (35.5; 45.9)	0.902	37.2 (35.7; 41.9)	37, 8 (35.1; 40.1)	0.644
pO2 mmHg	47 (40.5; 58)	62 (43; 70)	0.20	46.4 (39.3; 71.4)	58.4 (38.8; 69)	0.823	45 (39.3; 56.7)	64.1(39.9; 76.7)	0.349	49.1 (40; 63.8)	59.4 (41; 70)	0.722

BE mmol/L	-4.4 (-7.2; -3.9)	-1.2 (4.5; 1.3)	0.017	-0.9 (-5.4; 2.8)	0.9 (-1; 3)	0.279	1.1 (-2.7; 5.7)	2.4 (0.4; 5.4)	0.658	-0.4 (-2.5; 2.9)	0.7 (-0.8; 2.8)	0.477
HCO ₃ mmol/L	20.2 (19; 21.3)	23.4 (20.7; 26)	0.031	21.7 (19.7; 25.1)	25.6 (23.6; 27)	0.068	24.7 (21.4; 27)	27.1 (26.2; 28)	0.086	23.9 (21.7; 25.8)	24.6 (22.9; 26.7)	0.462
Scales												
Glasgow Coma Scale	13 (8; 14)	14 (14; 15)	0.019	7 (7; 14)	15 (14; 15)	0.0001	8 (3; 14)	15 (14; 15)	0.001	8.5 (5; 14)	15 (14; 15)	0.001
SOFA	6.5 (4.5; 10.5)	2 (1; 5)	0.0006	9.5 (6; 13)	1 (0; 4)	0.0001	7.5 (6; 12)	1 (0; 5.5)	0.001	7.5 (5; 13)	1 (0; 3)	0.001
Hemophagocytosis												
Hscore	81 (49; 138)	72 (42; 106)	0.567	98 (57; 134)	72 (38; 96)	0.074	88 (42; 140)	72 (49; 140)	0.801	120 (72; 146)	72 (49; 140)	0.545
MAS 2005 compliance, n (%)	7/12 (58.3)	22/36 (61.1)	0.865	7/10 (70)	18/33 (54.6)	0.386	6/9 (66.7)	14/23 (60.9)	0.761	6/9 (66.7)	10/13 (76.9)	0.595
MAS 2016 compliance, n (%)	4/12 (33.3)	11/36 (30.6)	0.857	4/10 (40)	8/33 (24.2)	0.330	5/9 (55.6)	3/22 (13.6)	0.015	4/9 (44.4)	2/13 (15.4)	0.015

HLH compliance, n (%)	2004	2/12 (16.7)	1/36 (2.8)	0.085	1/10 (10)	1/33 (3)	0.359	3/9 (33.3)	2/23 (8.7)	0.084	1/8 (12.5)	0/13 (0)	0.191
Therapy													
Ventilator, % O2		80 (50; 90)	45 (40; 50)	0.166	70 (60; 80)	40 (40; 50)	0.066	55 (25; 70)	0 (0; 40)	0.058	50 (40; 60)	17.5 (0; 35)	0.101
Infusion therapy ml/kg/day		50 (30; 90)	60 (50; 75)	0.318	46 (40; 50)	57.5 (40; 82.5)	0.420	50 (43; 60)	50 (30; 80)	0.569	50 (50; 70)	37.5 (20; 85)	0.302
Oxygen therapy through a face mask, n (%)		9/11 (81.8)	16/38 (42.1)	0.020	3 (27.3)	6 (18.8)	0.405	-	-	-	2/7 (28%)	0/7 (0)	0.127
High-flow nasal oxygen therapy, n (%)		1/10 (10)	4/38 (10.5)	0.961	1 (9.9)	2 (6.3)	0.961	-	-	-	-	-	-
Number of patients on ALV, n (%)		5/12 (41.7)	5/38 (13.2)	0.032	7 (63.6)	2 (6.3)	0.00004	6 (54.5)	2 (8.7)	0.002	7/10 (70)	1/12 (8.3)	0.003
Vasopressor requirement		3/12 (25)	4/37 (10.8)	0.222	1 (9.9)	2 (6.3)	0.650	3 (27.3)	1 (4.4)	0.038	1/10 (10)	0/13 (0)	0.244

μg/kg/min, n (%)												
Inotrope requirement	4/12 (33.3)	7/37 (18.9)	0.298	3 (27.3)	3 (9.4) (27.3)	0.140	3 (27.3)	2 (8.7)	0.117	4/10 (40)	2/13 (15.4)	0.183
μg/kg/min, n (%)												
Glucocorticoid therapy, n (%)	10 (76.9)	30/37 (81.1)	0.747	10 (90.9)	31 (96.9)	0.418	8 (72.7)	20 (86.9)	0.690	8/10 (80)	11/13 (84.6)	0.772
Therapy with intravenous immunoglobulin, n (%)	2 (74)	9/37 (24.3)	0.503	8 (72.7)	31 (96.9)	0.018	3 (27.3)	4 (17.4)	0.416	2/10 (10)	1/13 (7.7)	0.385
Biological therapy, n (%)	2 (15.4)	0/37 (0)	0.015	3 (27.3)	8 (25)	0.882	1 (9.1)	0 (0)	0.124	3/10 (30)	0/13 (0)	0.034
Anticoagulant use, n (%)	4/12 (33.3)	22/37 (59.5)	0.115	0 (0)	3 (9.4)	0.293	3 (27.3)	19 (82.6)	0.003	3/10 (30)	11/13 (84.6)	0.008
Blood transfusion, n (%)	6/12 (50)	8/36 (22.2)	0.067	3 (27.3)	25 (78.2)	0.003	4 (36, 4)	1 (4.4)	0.009	4/10 (40)	1/13 (7.7)	0.162

FFP transfusion, n (%)	6/12 (50)	6/36 (16.7)	0.021	3 (27.3)	3 (9.4)	0.140	4 (36, 4)	3 (13)	0.021	3/10 (30)	2/13 (15.4)	0.400
Diuretic therapy, n (%)	7/11 (63.6)	19/35 (54.4)	0.585	5 (45.5)	7 (21.9)	0.133	7 (63.6)	8 (34,8)	0.585	6/9 (66.7)	7/12 (58.3)	0.697

ALT - alanine aminotransferase; ALV - artificial lung mechanical ventilation; AST - aspartate aminotransferase; BE base excess; ESR - erythrocyte sedimentation rate; FFP - fresh frozen plasma; LDH - lactate dehydrogenase; MAS - macrophage activation syndrome; HLH - hemophagocytic histiocytosis; SOFA - multiple organ dysfunction rating scale;