

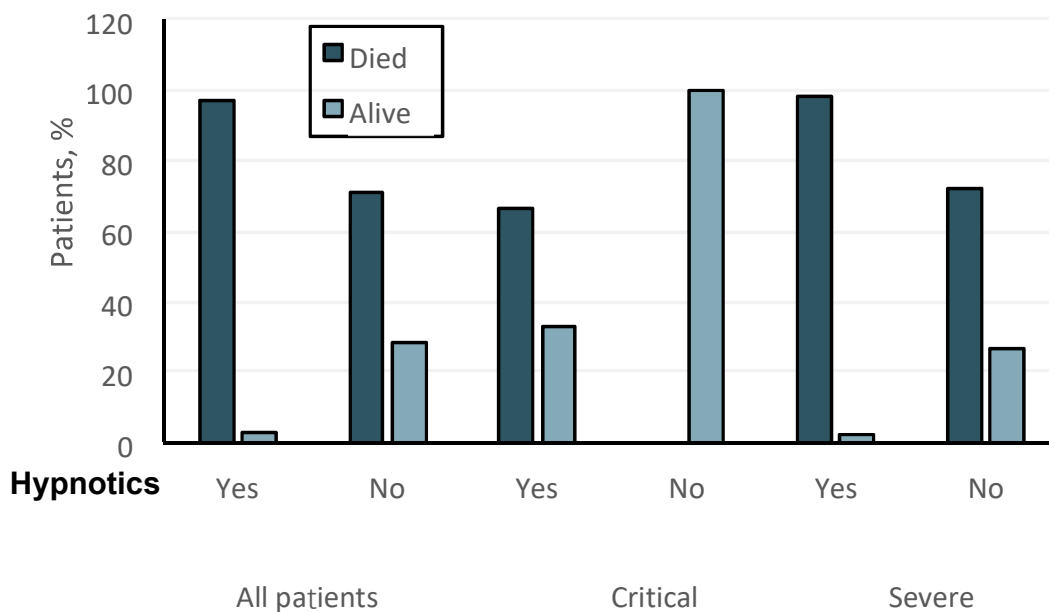
Supplementary Appendix

Association of Septic Shock with Mortality in Hospitalized COVID-19 Patients in Wuhan, China

Medications

Dexzopicleone was administrated depending on the suggested dose, 1 mg/per day at slumber time. Antibiotics (moxifloxacin), corticosteroid/glucocorticoid according to their clinical presentation Antiviral medicine, ganciclovir, oseltamivir, Arbidol®, Kaletra® (lopinavir/ritonavir, 200 mg/500mg bid), interferon- α (aerosol inhalation, 2 mL bid). Dose and correct method were as counseled in the guidelines of COVID-19 diagnosis and treatment trial (5th edition), by the National Health Commission of the People's Republic of China.

Supplementary Figure S1



Supplementary Figure S1 Clinical outcomes with hypnotics

The survival rates of patients who took hypnotics shown in critical and severe severity were 66.7% and 98.2%. Of 100% ,27.3% of Non-hypnotics patients died in the critical and severe group.

Supplementary Figure S2

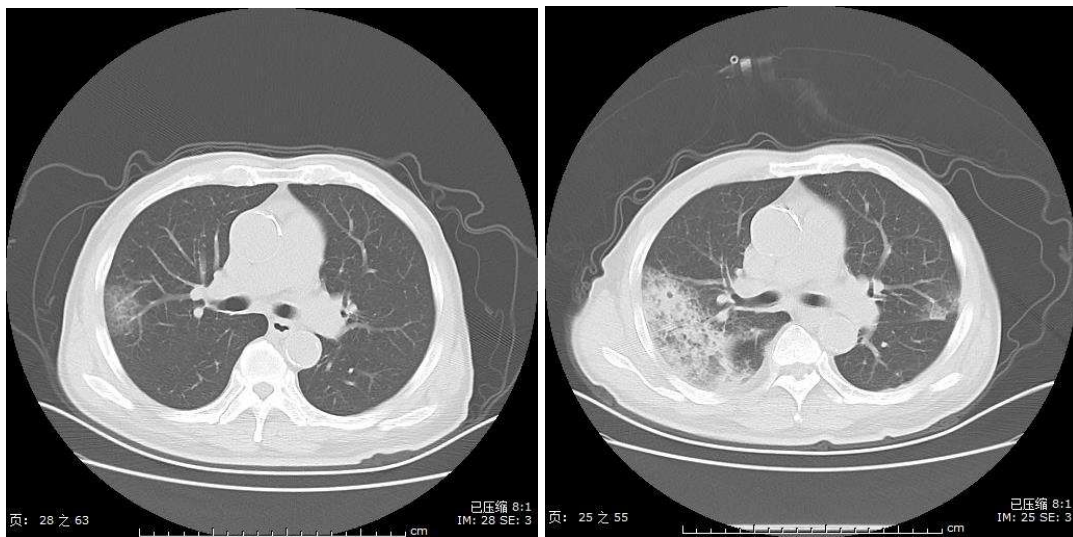


Figure S2. Illustrative chest computer tomography (CT) scans from one COVID-19 patients with septic shock. The picture on the left was collected when the patient was first admitted to the hospital, and on the right is five days later. The figure clearly shows that 1. Under the right lung pleura, see a patchy membrane glass shadow. 2. The lesions of both lungs increased more than before, and the lesions of the right lung progressed more than before.

Supplementary Table S1. Radiographic and laboratory findings of patients with COVID-19

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Radiologic and laboratory findings	All Patients	Clinical outcome		p Value
		Septic Shock	Non-Septic Shock	
	212	30	182	
Radiologic findings				
Abnormalities on chest CT – No./total No. (%)				
No GGO	2/212(0.9)	0/30(0)	2/182(1.1)	1.000
Local GGO	8/212(3.8)	1/30(3.3)	7/182(3.8)	1.000
Bilateral GGO	111/212(52.4)	11/30(36.7)	100/182(54.9)	0.063
Combination of patchy ground-glass opacity and pulmonary consolidation	39/212(18.4)	1/30(3.3)	38/182(20.9)	0.019
Crazy paving sign	19/212(9)	6/30(20)	13/182(7.1)	0.022
Diffuse patchy ground glass and air bronchogram	20/212(9.4)	3/30(10)	17/182(9.3)	1.000
Bilateral pulmonary multiple consideration and intralobular interstitial thickening	7/212(3.3)	6/30(20)	1/182(0.5)	<0.001
Laboratory findings				
PH*				0.377
<7.35	1/212(0.5)	1/11(9.1)	0/26(0)	0.308
7.35-7.45	11/212(5.2)	3/11(27.3)	8/26(30.8)	1.000
>7.45	25/212(11.8)	7/11(63.6)	18/26(69.2)	1.000
PaO2, mmHg *				0.505
<80	21/212(9.9)	6/11(54.5)	15/26(57.7)	1.000
80-100	6/212(2.8)	3/11(27.3)	3/26(11.5)	0.322
>100	10/212(4.7)	2/11(18.2)	8/26(30.8)	0.667
PaCO2, mmHg *				0.080
<35	22/212(10.4)	4/11(36.4)	18/26(69.2)	0.077
35-45	15/212(7.1)	7/11(63.6)	8/26(30.8)	0.094
PaO2/Fio2*				0.079
<400	31/212(14.6)	9/11(81.8)	22/25(88)	1.000

400-500	2/212(0.9)	2/11(18.2)	0/25(0)	0.089
>500	3/212(1.4)	0/11(0)	3/25(12)	0.545
White blood cell count, ×10⁹/L				0.000
<4	54/212(25.5)	5/29(17.2)	49/176(27.8)	0.263
4-10	133/212(62.7)	14/29(48.3)	119/176(67.6)	0.043
>10	18/212(8.5)	10/29(34.5)	8/176(4.5)	<0.001
Neutrophil count, ×10⁹/L				0.005
<40	52/212(24.5)	5/29(17.2)	47/176(26.7)	0.369
40-75	77/212(36.3)	5/29(17.2)	72/176(40.9)	0.013
>75	76/212(35.8)	19/29(65.5)	57/176(32.4)	0.001
Lymphocyte count, ×10⁹/L				0.066
<20	133/212(62.7)	25/29(86.2)	108/176(61.4)	0.008
20-50	71/212(33.5)	4/29(13.8)	67/176(38.1)	0.007
>50	1/212(0.5)	0/29(0)	1/176(0.6)	1.000
Monocyte count, ×10⁹/L				0.635
<3	78/212(36.8)	12/29(41.4)	66/175(37.7)	0.707
3-10	101/212(47.6)	15/29(51.7)	86/175(49.1)	0.797
>10	25/212(11.8)	2/29(6.9)	23/175(13.1)	0.411
Platelet count, ×10⁹/L				0.009
<100	12/212(5.7)	5/29(17.2)	7/175(4)	0.018
100-300	152/212(71.7)	22/29(75.9)	130/175(74.3)	0.857
>300	40/212(18.9)	2/29(6.9)	38/175(21.7)	0.063
C-reactive protein level mg/liter – No./total No. (%)				0.130
≤3	15/212(7.1)	0/30(0)	15/173(8.7)	0.143
>3	188/212(88.7)	30/30(100)	158/173(91.3)	0.133
SAA mg/liter – No./total No. (%)				0.078
≤10	19/212(9)	0/27(0)	19/169(11.2)	0.079

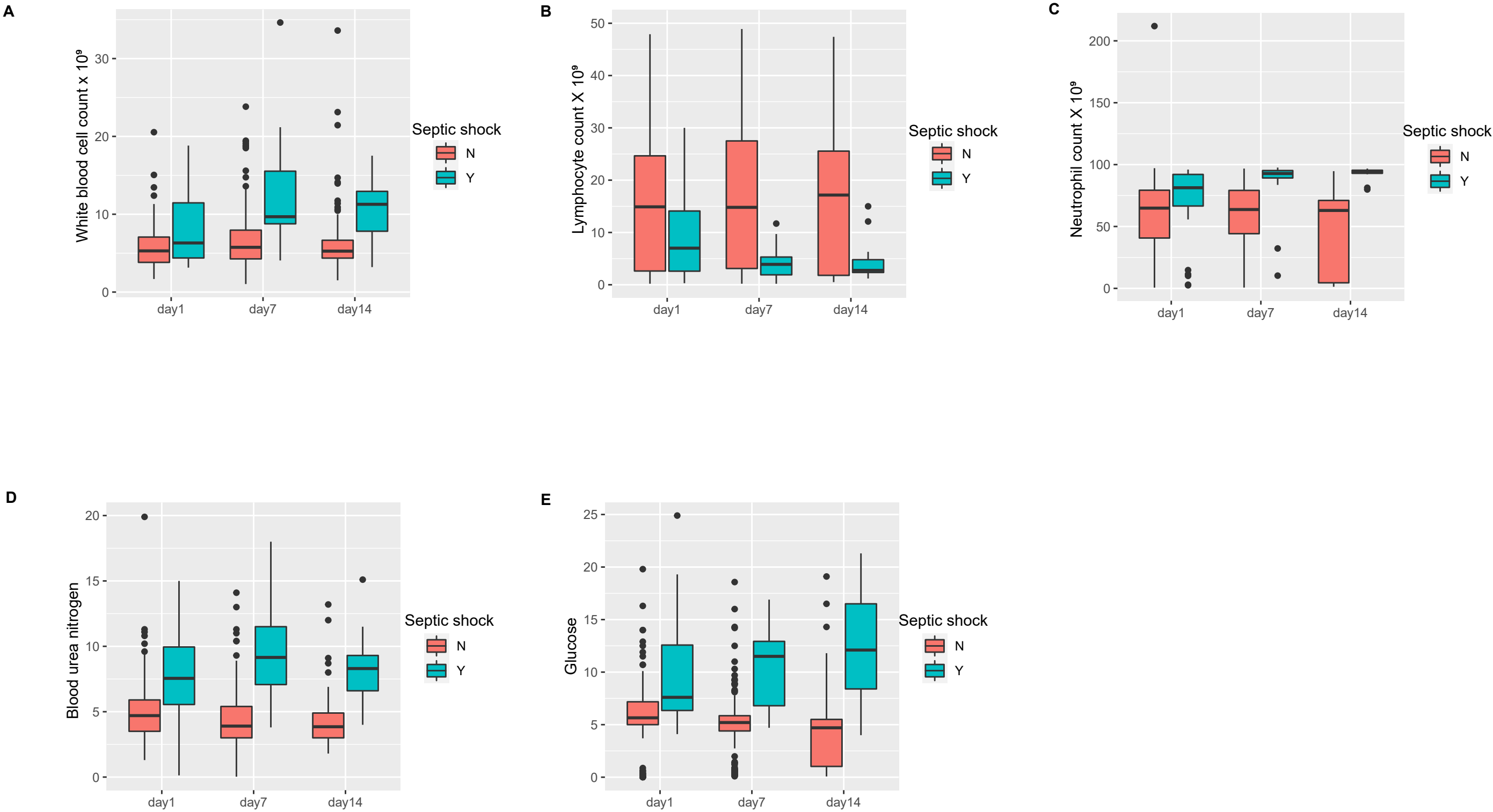
>10	177/212(83.5)	27/27(100)	150/169(88.8)	0.077
Prothrombin time, s				0.411
<9	15/212(7.1)	1/30(3.3)	14/161(8.7)	0.484
>14	30/212(14.2)	6/30(20)	24/161(14.9)	0.482
Activated partial thromboplastin time, s	28.8(23-39.25)	34.5(27.1-41.8)	27.7(20.3-38.8)	<0.001
Creatine kinase–CMB, U/L	23.9(21.65-25.1)	23.6(21.2-24.7)	41.4(24.2-45.6)	<0.001
Lactate, mmol/L	1.2(1.2-1.3)	1.2(1.2-1.3)	2.1(1.8-2.1)	<0.001
D-dimer ≥ 0.5 mg/liter – No./total No. (%)				0.907
≤0.5	92/212(43.4)	13/27(48.1)	79/162(48.8)	0.953
>0.5	96/212(45.3)	13/27(48.1)	83/162(51.2)	0.766
Hypersensitive troponin I, pg/mL				0.906
≤0.04	111/212(52.4)	18/28(64.3)	93/142(65.5)	0.902
>0.04	58/212(27.4)	9/28(32.1)	49/142(34.5)	0.809
Lactate dehydrogenase, U/L †				0.136
<120	37/212(17.5)	1/4(25)	36/52(69.2)	0.113
120 - 250	6/212(2.8)	1/4(25)	5/52(9.6)	0.372
>250	13/212(6.1)	2/4(50)	11/52(21.2)	0.237
Alanine aminotransferase, U/L				0.023
<7	36/212(17)	0/29(0)	36/177(20.3)	0.006
7-40	125/212(59)	20/29(69)	105/177(59.3)	0.324
>40	45/212(21.2)	9/29(31)	36/177(20.3)	0.196
Aspartate aminotransferase, U/L				0.008
<13	40/212(18.9)	1/29(3.4)	39/178(21.9)	0.024
13-35	101/212(47.6)	12/29(41.4)	89/178(50)	0.389
>35	66/212(31.1)	16/29(55.2)	50/178(28.1)	0.004
Total bilirubin, mmol/L				0.773
<5	13/212(6.1)	1/29(3.4)	12/178(6.7)	0.689

5-22	158/212(74.5)	22/29(75.9)	136/178(76.4)	0.949
>22	36/212(17)	6/29(20.7)	30/178(16.9)	0.613
Blood urea nitrogen, mmol/L				0.040
<3	28/212(13.2)	2/29(6.9)	26/176(14.8)	0.397
3-8	117/212(55.2)	13/29(44.8)	104/176(59.1)	0.150
>8	60/212(28.3)	14/29(48.3)	46/176(26.1)	0.015
Creatinine, μmol/L				0.030
<88	170/212(80.2)	19/29(65.5)	151/177(85.3)	0.009
88-144	31/212(14.6)	8/29(27.6)	23/177(13)	0.042
>144	5/212(2.4)	2/29(6.9)	3/177(1.7)	0.144
Procalcitonin, ng/mL				0.645
≤ 0.1	125/212(59)	17/25(68)	108/149(72.5)	0.645
>0.1	49/212(23.1)	8/25(32)	41/149(27.5)	0.645
Glucose, mmol/L				<0.001
<3.9	35/212(16.5)	0/26(0)	35/176(19.9)	0.006
3.9-6.1	84/212(39.6)	5/26(19.2)	79/176(44.9)	0.020
>6.1	83/212(39.2)	21/26(80.8)	62/176(35.2)	<0.001
Potassium, mmol/L				0.026
<3.5	54/212(25.5)	4/25(16)	50/171(29.2)	0.239
3.5-5.5	141/212(66.5)	20/25(80)	121/171(70.8)	0.368
>5.5	1/212(0.5)	1/25(4)	0/171(0)	0.126

*Data were missing for PH in 175(82.5%), for PaO₂ in 175(82.5%), for PaCO₂ in 175(82.5%), for PaO₂:FiO₂ in 176(83%)

†Data were missing for lactate dehydrogenase in 152(71.6%)

Supplementary Figure S3



Supplementary Figure S3 Dynamic Profile of Laboratory test. Fourteen days dynamic laboratory test results of COVID-19 patients with septic shock after hospitalization. (A) White blood cell count, (C) Neutrophil count, (E) Blood urea nitrogen, and (F) Glucose was significantly increased in the septic shock group. (B) Lymphocyte count was significantly decreased.