Supplemental Figures and Tables

group)	versus those w	vho did not pro	gress to se	evere illness (non-s	severe group).				
		Day 0			Day 4		Change	es from Day 0 to Da	y 4
	Severe (n=19)	Non-severe (n=115)	Р	Severe (n=18)	Non-severe (n=115)	Р	Severe (n=18)	Non-severe (n=115)	Р
Clinical biomarkers									
APACHE-II	9.0(4.0~11.0)	8.0(5.0~11.0)	0.518	11.5(7.5~13.8)	8.0(4.0~11.0)	0.019	5.0(0.2~8.5)	0.0(-1.5~2.0)	0.003
NLR	3.4(2.8~5.8)	2.7(1.8~3.7)	0.010	5.0(2.4~9.7)	1.9(1.5~2.6)	< 0.001	1.2(-0.9~3.0)	-0.4(-1.5~0.2)	0.005
D-dimer	0.5(0.3~0.9)	0.3(0.2~0.5)	0.011	0.8(0.4~1.0)	0.4(0.3~0.6)	0.003	0.2(0.0~0.3)	0.0(-0.0~0.1)	0.045
CT features									
PGV, %	2.2(0.9~4.2)	0.8(0.2~2.1)	0.009	5.5(4.8~8.8)	1.5(0.7~2.8)	< 0.001	3.7(1.4~5.0)	0.4(0.0~1.3)	< 0.001
PSV, %	2.4(0.7~4.6)	0.7(0.1~2.1)	0.005	11.4(5.9~16.3)	1.2(0.6~2.9)	< 0.001	5.5(3.8~10.9)	0.3(0.0~1.2)	< 0.001
PCV, %	1.1(0.2~2.2)	0.3(0.0~1.0)	0.009	5.8(2.3~11.3)	0.7(0.2~1.5)	< 0.001	4.0(1.8~7.5)	0.2(0.0~0.7)	< 0.001

Table S1. Comparisons of clinical biomarkers and quantitative CT features for the patients who progressed to severe illness (severe group) versus those who did not progress to severe illness (non-severe group).

Note:

(a) All variables are expressed as median (interquartile range). GGO, ground glass opacity.

(b) PGV=Percentage of GGO volume; PSV=Percentage of semiconsolidation volume; PCV=Percentage of consolidation volume

(c) One patient had severe events on the same day when performing the second CT, and thus he was removed from the analysis with day 4 and changes from day 0 to day 4.



Figure S1. Receiver operating characteristic (ROC) curves for predicting occurrence of severe illness with logistic regression analysis. A: on day 0. B: on day 4. C: in terms of changes from day 0 to day 4.



Figure S2 Kaplan-Meier survival analysis of the relationships between each of NLR, APACHE II, and quantitative CT features and severe-event-free survival on day 0. Each feature was stratified by the median to perform Kaplan-Meier analysis.



Figure S3. Kaplan-Meier survival analysis of the relationships between each of NLR, APACHE II, and quantitative CT features and severe-event-free survival on day 4. Each feature was stratified by the median to perform Kaplan-Meier analysis.



Figure S4. Kaplan-Meier survival analysis of the relationships between each of NLR, APACHE II, and quantitative CT features and severe-event-free survival in terms of changes from day 0 to day 4. Each feature was stratified by the median to perform Kaplan-Meier analysis.

A		
Model Features	HR (95%CI)	Р
APACHE-II Age	1.04 (1.01~1.08)	0.018
Gender:Male	5.30 (1.74~16.12)	0.003
	0.91 (0.81~1.02)	0.118
1.0 2.0 4.0 8.0 16 B HR	.0	
Model Features	HR (95%CI)	Р
NLR Age	1.03 (0.99~1.06)	0.112
Gender:Male	4.42 (1.44~13.57)	0.009
	1.15 (0.96~1.37)	0.138
1.0 2.0 4.0 8.0 C HR		
Model Features	HR (95%CI)	P
D-dimer Age	1.03 (1.00~1.07)	0.040
Gender:Male	4.82 (1.59~14.56)	0.005
D–dimer –	0.93 (0.63~1.39)	0.739
0.50 1.0 2.0 4.0 8.0 D HR		
Model Features	HR (95%CI)	Р
CT features Age	1.03 (0.99~1.06)	0.147
Gender:Male	⊣ 4.84 (1.56~15.03)	0.006
PGV H	1.03 (0.80~1.32)	0.843
PSV I	1.00 (0.59~1.68)	0.987
PCV I III	1.20 (0.61~2.34)	0.597
E 0.50 1.0 2.0 4.0 8.0 HR		
Model Features	HR (95%CI)	Р
NLR+CT features Age	1.02 (0.99~1.06)	0.190
Gender:Male	⊣ 4.57 (1.47~14.15)	0.008
NLR H	1.12 (0.91~1.38)	0.297
PGV H	0.98 (0.77~1.26)	0.904
PSV I	1.03 (0.63~1.70)	0.897
PCV	1.12 (0.58~2.17)	0.735
0.50 1.0 2.0 4.0 8.0 HB		

Figure S5. Relationship between each feature on day 0 and severe-event-free survival on the multivariate Cox analyses. All models were adjusted for traditional clinical variables including age and gender.

Α								
Model	Featur	es					HR (95%CI)	Р
APACHE-II	Age	-					1.01 (0.98~1.05)	0.489
	Gender:	Male	I				4.38 (1.43~13.44)	0.010
	APACHE	E-II ⊨•					1.13 (1.02~1.25)	0.015
B		1.0	2.0	4.0 HB	8.0			
Model F	eatures						HR (95%CI)	P
NLR	Age	Hert					1.02 (0.98~1.05)	0.316
Ge	nder:Male	F					3.45 (1.08~11.03)	0.037
	NLR	HEH					1.09 (1.03~1.15)	0.004
С		1.0	2.0	4.0 HB	8.0			
Model	Features			1111			HR (95%CI)	P
D-dimer	Age	H					1.01 (0.97~1.05)	0.560
	Gender:Mal	e	H				5.28 (1.65~16.94)	0.005
	D-dimer			I			2.39 (1.06~5.42)	0.036
D		1.0	2.0	4.0 HR	8.0	16.0		
Model	Featur	es					HR (95%CI)	P
CT features	Age		H				0.99 (0.95~1.03)	0.677
	Gender:	Male	H		-		3.08 (0.98~9.65)	0.053
	PGV	/	⊢ ∎ <mark> </mark> -1				0.93 (0.74~1.17)	0.519
	PSV	,		4			1.14 (0.93~1.38)	0.203
	PCV	,					1.20 (0.95~1.52)	0.128
E		0.50	1.0	2.0 HR	4.0	8.0		
Model	F	eatures					HR (95%CI)	Р
NLR+CT fea	tures	Age	H				0.99 (0.95~1.03)	0.720
	Ge	ender:Male	1	 	-		3.36 (1.05~10.78)	0.042
		NLR	H	ł			0.97 (0.89~1.07)	0.559
		PGV		-1			0.92 (0.74~1.16)	0.486
		PSV	H				1.16 (0.94~1.42)	0.157
		PCV	H-				1.20 (0.95~1.51)	0.133
			0.50 1.0	0 2.0 HR	4.0	8.0		

Figure S6. Relationship between each feature on day 4 and severe-event-free survival on the multivariate Cox analyses. All models were adjusted for traditional clinical variables including age and gender.

Α								
Model	Feature	S					HR (95%CI)	Р
APACHE-II	Age	-					1.02 (0.98~1.05)	0.339
	Gender:M	lale	H				4.73 (1.55~14.49)	0.006
	APACHE	<u>-II +•</u>					1.22 (1.10~1.35)	0.000
В		1.0	2.0	4.0 HR	8.0			
Model Fe	eatures						HR (95%CI)	Р
NLR	Age	Hel					1.02 (0.99~1.05)	0.215
Gen	der:Male	 					3.76 (1.19~11.87)	0.024
	NLR	H=-1					1.09 (1.02~1.18)	0.013
с		1.0	2.0	4.0 HR	8.0			
Model	Features						HR (95%CI)	Р
D-dimer	Age	Hand					1.02 (0.98~1.05)	0.330
G	ender:Male	e	ŀ				4.86 (1.54~15.32)	0.007
	D-dimer	· · · · · ·		•			3.18 (1.09~9.29)	0.034
D		1.0	2.0	4.0 HR	8.0			
Model	Feature	s					HR (95%CI)	P
CT features	Age		M				1.00 (0.97~1.03)	0.954
	Gender:N	lale	H			—	2.43 (0.74~7.97)	0.142
	PGV		I III				1.39 (1.05~1.84)	0.023
	PSV	1					0.83 (0.64~1.10)	0.194
	PCV		F				1.67 (1.17~2.38)	0.005
E		0.50	1.0	2.0 HR	4.0	8.0		
Model		Features					HR (95%CI)	Р
NLR+CT fea	tures	Age		•			1.00 (0.97~1.03)	0.944
	Ge	ender:Male	⊢		•		2.30 (0.68~7.84)	0.183
		NLR		H e -I			1.02 (0.93~1.12)	0.713
		PGV					1.38 (1.04~1.84)	0.026
		PSV	—	∎┥┥			0.82 (0.62~1.09)	0.173
		PCV		 			1.69 (1.18~2.43)	0.004
			0.50	1.0 2.0 HF) 4.0 }	8	.0	

Figure S7. Relationship between changes in each feature from day 0 to day 4 and severe-event-free survival on the multivariate Cox analyses. All models were adjusted for traditional clinical variables including age and gender.