

Table 1: Demographic, laboratory findings, and outcomes of COVID-19 patients.

	Cancer (n=44)	Non-cancer (n=541)	P value
Age, years	67 (IQR: 54-80.5)	59 (IQR: 42-69)	0.005
Gender			
Female (%)	20 (45.5)	294 (54.3)	0.255
Male (%)	24 (54.5)	247 (45.7)	
Time in-hospital, days	31 (IQR: 19-48.5)	21 (IQR: 13-31)	< 0.001
Laboratory findings			
WBC, $\times 10^9/L$	6.15 (IQR: 4.55-7.51)	5.37 (IQR: 4.30-6.87)	0.065
NEUT, $\times 10^9/L$	4.18 (IQR: 2.89-6.32)	3.43 (IQR: 2.59-4.80)	0.015
LYMP, $\times 10^9/L$	0.85 (IQR: 0.58-1.40)	1.26 (IQR: 0.84-1.71)	0.001
NLR	5.15 (IQR: 2.53-8.52)	2.61 (IQR: 1.68-4.92)	0.001
ALB, g/L	36.8 (IQR: 31.7-42.2)	39.5 (IQR: 35.15-43.2)	0.017
IL-6, pg/L	13.9 (IQR: 6.24-32.4)	4.19 (IQR: 2.15-12.23)	< 0.001
CRP, mg/dl	2.96 (IQR: 0.38-6.32)	0.59 (IQR: 0.11-3.37)	< 0.001
Severity			
Moderate (%)	38 (86.4)	472 (87.2)	0.866
Severe/Critical (%)	6 (13.6)	69 (12.8)	
Progression among moderate patients			
Stabilization (%)	22 (57.9)	366 (77.5)	0.006
Poor progression (%)	16 (42.1)	106 (22.5)	
Outcomes			
Survivor (%)	32 (72.73)	429 (88.09)	0.001
Non-survivor (%)	12 (27.27)	58 (11.91)	

Note: Quantitative vales coincided with normal distribution are expressed by mean \pm SD, and median (interquartile range, IQR) for the non-normal distribution data. Frequency (percentage) was used to express the counting data.

P-values: result from Chi-square test (for gender, severity, progression among moderate patients and outcomes) and Mann-Whitney U-test (for age, time in-hospital and laboratory findings).

Abbreviations: WBC, white blood cell count; NEUT, neutrophil count; LYMP, lymphocyte count; NLR, neutrophil-to-lymphocyte ratio; ALB, serum albumin; IL-6, interleukin-6; CRP, C-reactive protein.

Table 2: Risk factors associated with poor progression among moderate patients.

	Stabilization (n=388)	Poor progression (n=122)	P value	Multivariable (95% CI for OR)	P value
Age, years	56 (IQR: 38-67)	67 (IQR: 53-80.5)	< 0.001	1.019 (1.001-1.037)	0.04
Gender					
Female (%)	223 (57.5)	54 (44.3)	0.011	1.006 (0.565-1.793)	0.983
Male (%)	165 (42.5)	68 (55.7)			
Group					
Cancer (%)	22 (5.7)	16 (13.1)	0.006	1.164 (0.446-3.036)	0.757
Non-cancer (%)	366 (94.3)	106 (86.9)			
Laboratory findings					
NEUT, $\times 10^9/L$	3.25 (IQR: 2.43-4.23)	4.18 (IQR: 2.8-6.74)	< 0.001	1.95 (0.425-8.952)	0.39
LYMP, $\times 10^9/L$	1.42 (IQR: 1.02-1.85)	0.75 (IQR: 0.53-1.21)	< 0.001	1.057 (0.179-6.436)	0.937
NLR	2.17 (IQR: 1.53-3.57)	5.15 (IQR: 2.96-10.72)	< 0.001	1.168 (0.994-1.374)	0.059
ALB, mean \pm SD, g/L	40.66 \pm 5.28	35.59 \pm 5.53	< 0.001	0.943 (0.892-0.997)	0.039
IL-6, pg/L	3.33 (IQR: 1.88-7.38))	13.9 (IQR: 4.48-52.45)	< 0.001	1.027 (1.013-1.042)	< 0.001
CRP, mg/dl	0.31 (IQR: 0.08-1.92)	3.59 (IQR: 1.04-6.56)	< 0.001	1.133 (1.049-1.224)	0.001

Note: Quantitative vales coincided with normal distribution are expressed by mean \pm SD, and median (interquartile range, IQR) for the non-normal distribution data. Frequency (percentage) was used to express the counting data.

P-values: result from Chi-square test (for gender and group), Independent t-test (for ALB) and Mann-Whitney U-test (for age, NEUT, LYMP, NLR, IL-6 and CRP). The significant factors of univariate analysis were included into multivariable logistic regression model.

Abbreviations: NEUT, neutrophil count; LYMP, lymphocyte count; NLR, neutrophil-to-lymphocyte ratio; ALB, serum albumin; IL-6, interleukin-6; CRP, C-reactive protein.

Table 3: Risk factors associated poor progression in different groups.

Cancer group	Stabilization (n=22)	Poor progression (n=16)	P value	Multivariable (95% CI for OR)	P value
Age, mean \pm SD, years	62.82 \pm 19.73	68 \pm 18.11	0.414		
Gender					
Female (%)	11 (50.0)	8 (50.0)	1		
Male (%)	11 (50.0)	8 (50.0)			
NEUT, $\times 10^9/L$	3.66 (IQR: 2.42-4.66)	5.28 (IQR: 2.24-7.57)	0.061		
LYMP, mean \pm SD, $\times 10^9/L$	1.15 \pm 0.55	0.98 \pm 0.49	0.315		
NLR	3.54 (IQR: 1.78-6.49)	5.15 (IQR: 2.98-11.61)	0.27		
ALB, mean \pm SD, g/L	38.39 \pm 5.53	35.03 \pm 8.87	0.205		
IL-6, pg/L	9.18 (IQR: 4.33-29.86))	14.75 (IQR: 9.85-55.41)	0.055		
CRP, mg/dl	1.77 (0.24-3.56)	5.11 (0.95-13.56)	0.052		
Non-cancer group	Stabilization (n=366)	Poor progression (n=106)	P value	Multivariable (95% CI for OR)	P value
Age, years	56 (IQR: 38-66)	65.5 (IQR: 53-79)	< 0.001	1.019 (0.999-1.039)	0.06
Gender					
Female (%)	212 (57.9)	46 (44.3)	0.008	0.984 (0.521-1.856)	0.96
Male (%)	154 (42.1)	60 (56.6)			
NEUT, $\times 10^9/L$	3.24 (IQR: 2.43-4.23)	4.09 (IQR: 2.8-6.55)	< 0.001	0.775 (0.59-1.018)	0.067
LYMP, $\times 10^9/L$	1.44 (IQR: 1.04-1.86)	0.74 (IQR: 0.51-1.21)	< 0.001	0.605 (0.236-1.55)	0.295
NLR	2.16 (IQR: 1.51-3.43)	5.23 (IQR: 2.94-10.45)	< 0.001	1.251 (1.037-1.509)	0.019
ALB, mean \pm SD, g/L	40.8 \pm 5.24	35.67 \pm 4.92	< 0.001	0.932 (0.873-0.995)	0.034
IL-6, pg/L	3.22 IQR: (1.78-6.96)	13.3 (IQR: 4.07-51.54)	< 0.001	1.031 (1.016-1.047)	< 0.001
CRP, mg/dl	0.29 (IQR: 0.08-1.72)	3.49 (IQR: 1.08-6.28)	< 0.001	1.113 (1.02-1.215)	0.016

Note: Quantitative vales coincided with normal distribution are expressed by mean \pm SD, and median (interquartile range, IQR) for the non-normal distribution data. Frequency (percentage) was used to express the counting data.

P-values: result from Chi-square test (for gender), Independent t-test (for ALB) and Mann-Whitney U-test (for age, NEUT, LYMP, NLR, IL-6 and CRP). The significant factors of univariate analysis were included into multivariable logistic regression model.

Abbreviations: NEUT, neutrophil count; LYMP, lymphocyte count; NLR, neutrophil-to-lymphocyte ratio; ALB, serum albumin; IL-6, interleukin-6; CRP, C-reactive protein.

Table 4: Risk factors associated with death in-hospital.

	Survivor (n=524)	Non-survivor (n=61)	P value	Multivariable (95% CI for OR)	P value
Age, years	57 (IQR: 41-68)	78 (IQR: 64-86)	< 0.001	1.112 (1.073-1.152)	< 0.001
Gender					
Female (%)	294 (56.1)	20 (32.8)	0.001	0.266 (0.11-0.641)	0.003
Male (%)	230 (43.9)	41 (67.2)			
Group					
Cancer (%)	32 (6.1)	12 (19.7)	0.001	1.937 (0.662-5.883)	0.223
Non-cancer (%)	492 (93.9)	49 (80.3)			
Severity					
Moderate (%)	462 (88.2)	48 (78.7)	0.036	0.514 (0.162-1.628)	0.258
Severe/Critical (%)	62 (11.8)	13 (21.3)			
Laboratory findings					
NEUT, ×10 ⁹ /L	3.42 (IQR: 2.54-4.6)	6.25 (IQR: 3.04-10.2)	< 0.001	1.755 (0.32-9.628)	0.517
LYMP, ×10 ⁹ /L	1.29 (IQR: 0.87-1.73)	0.73 (IQR: 0.52-1.22)	< 0.001	1.445 (0.168-12.434)	0.737
NLR	2.54 (IQR: 1.65-4.53)	6.07 (IQR: 3.35-17.98)	< 0.001	1.028 (0.949-1.113)	0.504
ALB, g/L	40 (IQR: 35.6-43.4)	33.5 (IQR: 31-38.6)	< 0.001	0.986 (0.913-1.065)	0.723
IL-6, pg/L	3.86 (IQR: 2.1-9.74)	49.87 (IQR: 21.65-143.4)	< 0.001	1.008 (1.003-1.013)	0.003
CRP, mg/dl	0.49 (IQR: 0.11-2.99)	5.11 (IQR: 2.54-10.66)	< 0.001	1.114 (1.026-1.211)	0.01

Note: Quantitative vales coincided with normal distribution are expressed by mean ± SD, and median (interquartile range, IQR) for the non-normal distribution data. Frequency (percentage) was used to express the counting data.

P-values: result from Chi-square test (for gender, severity and group), and Mann-Whitney U-test (for age and laboratory findings). The significant factors of univariate analysis were included into multivariable logistic regression model.

Abbreviations: NEUT, neutrophil count; LYMP, lymphocyte count; NLR, neutrophil-to-lymphocyte ratio; ALB, serum albumin; IL-6, interleukin-6; CRP, C-reactive protein.

Table 5: Risk factors associated with death in-hospital among different groups.

Cancer group	Survivor (n=32)	Non-survivor (n=12)	P value	Multivariable (95% CI for OR)	P value
Age, mean \pm SD, years	59.81 \pm 18.76	76.83 \pm 8.99	< 0.001	1.051 (0.927-1.191)	0.44
Gender					
Female (%)	16 (50)	4 (33.3)	0.323		
Male (%)	16 (50)	8 (66.7)			
Severity					
Moderate (%)	462 (88.2)	48 (78.7)	0.321		
Severe/Critical (%)	62 (11.8)	13 (21.3)			
NEUT, mean \pm SD, $\times 10^9/L$	4.34 \pm 2.21	8.17 \pm 6.87	0.083		
LYMP, $\times 10^9/L$	1.01 (IQR: 0.66-1.45)	0.54 (IQR: 0.37-0.74)	0.05		
NLR, mean \pm SD	4.93 \pm 3.19	13.38 \pm 12.24	0.037	1.197 (0.98-1.463)	0.078
ALB, mean \pm SD, g/L	38.57 \pm 6.42	30.15 \pm 6.61	0.001	0.952 (0.718-1.264)	0.735
IL-6, pg/L	10.09 (IQR: 4.41-23.61)	39.5 (IQR: 21.18-127)	0.001	1.012 (0.965-1.062)	0.621
CRP, mg/dl	1.77 (IQR: 0.25-3.8)	10.8 (IQR: 5.11-15.58)	0.001	1.214 (0.959-1.536)	0.106
Non-cancer group	Survivor (n=492)	Non-survivor (n=49)	P value	Multivariable (95% CI for OR)	P value
Age, years	57 (41,68)	78 (62,87.5)	< 0.001	1.126 (1.08-1.173)	< 0.001
Gender					
Female (%)	278 (56.5)	16 (32.7)	0.001	4.305 (1.588-11.637)	0.004
Male (%)	214 (43.5)	33 (67.3)			
Severity					
Moderate (%)	433 (88)	39 (79.6)	0.092		
Severe/Critical (%)	59 (12)	10 (20.4)			
NEUT, mean \pm SD, $\times 10^9/L$	3.4 (2.54-4.56)	6.22 (3,9.8)	< 0.001	1.494 (0.232-9.612)	0.673
LYMP, $\times 10^9/L$	1.3 (IQR: 0.88-1.73)	0.87 (IQR: 0.56-1.27)	< 0.001	0.992 (0.095-10.415)	0.995
NLR	2.5 (IQR: 1.64-4.39)	5.62 (IQR: 3.38-14.05)	< 0.001	1.021 (0.93-1.12)	0.665
ALB, g/L	40 (IQR: 35.6-43.4)	34.35 (IQR: 31.4-39.05)	< 0.001	0.99 (0.907-1.081)	0.826
IL-6, pg/L	3.7 (IQR: 2.03-8.95)	50.25 (IQR: 22.53-182.63)	< 0.001	1.008 (1.002-1.013)	0.007

CRP, mg/dl	0.47 (IQR: 0.1-2.93)	3.99 (IQR: 2.32-9.64)	< 0.001	1.11 (1.004-1.227)	0.041
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P-values: result from Chi-square test (for gender and severity), Independent t-test (for normal distribution values) and Mann-Whitney U-test (for non-normal distribution values). The significant factors of univariate analysis were included into multivariable logistic regression model.

Abbreviations: NEUT, neutrophil count; LYMP, lymphocyte count; NLR, neutrophil-to-lymphocyte ratio; ALB, serum albumin; IL-6, interleukin-6; CRP, C-reactive protein.