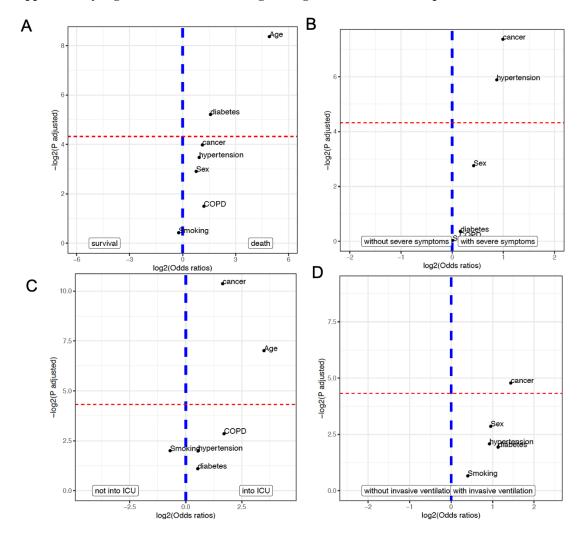
## **Supplementary Appendix**

## List of hospitals reporting cases:

Zhongnan Hospital of Wuhan University, Union Hospital affiliated to Tongji Medical College of Huazhong University of Science and Technology, Tongji Hospital affiliated to Tongji Medical College of Huazhong University of Science and Technology, Renmin Hospital of Wuhan University, Hubei Cancer Hospital, The Leishenshan Hospital, The Central Hospital of Wuhan affiliated to Tongji Medical College of Huazhong University of Science and Technology, Wuhan Seventh hospital, Wuhan Puren hospital, The Central Hospital of Huanggang, The Central Hospital of Xianning, Xiangyang First People's Hospital affiliated to Hubei University of Medicine, The People's Hospital of Shiyan, The People's Hospital of Huangmei.

## Supplementary Figure 1. Multivariable logistic regression of COVID-19 patients



Supplementary Figure 1. Multivariable logistic regression of severe conditions vs age, sex, smoking, diabetes, hypertension, COPD and cancer. X axis shows odds ratios of the factors in the association. Y axis indicates -log2 (p values). The higher the points along Y axis the more significant the association appears. The red color dashed line indicates p values =0.05. (A) logistic regression of death, (B) logistic regression of experiencing any severe symptoms, (C) logistic regression of ICU admission, (D) logistic regression of utilization of invasive mechanical ventilation vs age, sex, smoking, diabetes, hypertension, COPD and cancer; Odd Ratio, 95% CI and p values are listed in Supplementary Table 1. Abbreviations: ICU=intensive care unit; COPD=Chronic Obstructive Pulmonary Disease.

**Supplementary Table 1.** Logistic regression results of COVID-19 patients

Outcome	Odds Ratio	95% CI lower	95% CI upper	p value	Features
	2.171	-0.806	5.149	0.064	Cancer
	30.103	23.918	36.289	0.003	Age
	1.696	-1.093	4.485	0.134	Sex
Death	2.983	-0.229	6.195	0.027	Diabetes
	1.914	-0.961	4.788	0.090	Hypertension
	2.300	-2.533	7.134	0.356	COPD
	0.854	-2.357	4.065	0.749	Smoking
	1.987	-0.530	4.505	0.006	Cancer
	0.219	-3.502	3.940	0.018	Age
	1.337	-1.058	3.731	0.148	Sex
Severe	1.118	-1.813	4.048	0.782	Diabetes
symptoms	1.829	-0.695	4.353	0.017	Hypertension
	1.104	-3.483	5.692	0.907	COPD
	1.007	-1.615	3.628	0.982	Smoking
	3.129	0.379	5.880	0.001	Cancer
	11.242	6.376	16.108	0.008	Age
	1.445	-1.811	4.700	0.469	Diabetes
ICU	1.472	-1.271	4.216	0.250	Hypertension
	3.267	-1.095	7.629	0.139	COPD
	0.615	-2.382	3.611	0.251	Smoking
	2.709	-0.448	5.866	0.037	Cancer
Ī	0.011	-8.295	8.317	0.002	Age
Ī	1.936	-1.124	4.995	0.138	Sex
IMV	2.193	-1.758	6.144	0.263	Diabetes
Ī	1.898	-1.477	5.274	0.238	Hypertension
	NA	NA	NA	NA	COPD
Ī	1.318	-2.178	4.815	0.633	Smoking

Abbreviations: ICU=intensive care unit; IMV=invasive mechanical ventilation; COPD=Chronic Obstructive Pulmonary Disease.

Supplementary Table 2. Pair-wise comparison between different subgroups of COVID-19 patients

		Odd	Ratio			95	% CI			p v	alue		IL-6	
Item	Death	ICU	Severe symptoms	IMV	Death	ICU	Severe symptoms	IMV	Death	ICU	Severe symptoms	IMV	Mean (SD)	p value
Cancer vs No cancer	2.34	2.84	2.79	14	[1.15, 4.77]	[1.59, 5.08]	[1.74, 4.41]	[4.30, 45.56]	0.03	< 0.01	< 0.01	< 0.01	73.13 (130.55) vs 35.50 (71.38)	0.91
Hematological cancer vs No cancer	9.07	9.66	10.61	38	[2.16, 38.18]	[2.49, 37.36]	[2.60, 43.25]	[5.95, 242.63]	0.01	<0.01	< 0.01	<0.01	112.71 (147.79) vs 35.50 (71.38)	0.20
Metastatic cancer vs No cancer	5.58	6.59	5.97	55.42	[1.71 18.23]	[2.32,18.72]	[2.24, 15.91]	[13.21, 232.47]	0.01	< 0.01	< 0.01	< 0.01	24.22 (21.87) vs 35.50 (71.38)	0.79
Non-metastatic cancer vs No cancer	0.83	1.47	1.87	2.97	[0.19, 3.58]	[0.55, 3.93]	[0.93, 3.76]	[0.32, 27.01]	1	0.39	0.10	0.34	51.41 (102.94) vs 35.50 (71.38)	0.62
Lung cancer vs Other cancers without lung metastasis	0.27	0.25	0.21	0.07	[0.09, 0.84]	[0.09, 0.67]	[0.09, 0.50]	[0.02, 0.24]	0.03	0.01	< 0.01	< 0.01	176.98 (187.42) vs 40.63 (83.09)	0.02
Other cancers with lung metastasis vs Other cancers without lung metastasis	3.56	4.43	5.29	14.45	[0.98, 12.96]	[1.50, 13.04]	[1.99, 14.03]	[3.53, 59.20]	0.08	0.01	<0.01	< 0.01	142.73 (140.59) vs 40.63 (83.09)	0.62
Lung cancer vs Other cancers with lung metastasis	0.96	1.11	1.12	0.96	[0.19, 5.03]	[0.27, 4.52]	[0.32, 3.99]	[0.18, 5.03]	1	1	1	1	176.98(187.42) vs 142.74 (140.59)	0.06
Cancer surgery vs No cancer	6.05	7.24	8.84	44.33	[1.17, 31.33]	[1.67,31.39]	[2.07, 37.70]	[6.78, 290.09]	0.07	0.02	< 0.01	< 0.01	259.48 (197.36) vs. 35.50 (71.38)	0.41
Cancer radiotherapy vs No cancer	1.65	1.09	1.77	12.09	[0.21, 13.23]	[0.14, 8.71]	[0.47, 6.67]	[1.25,117.17]	0.48	1	0.42	0.11	5.84 (3.68) vs.35.50 (71.38)	0.49
Cancer chemotherapy vs No cancer	4.54	4.39	3.54	20.46	[1.21, 16.99]	[1.34, 14.40]	[1.23, 10.20]	[3.44, 121.86]	0.05	0.03	0.03	0.01	117.65 (149.38) vs. 35.50 (71.38)	0.07
Cancer targeted therapy vs No cancer	0	0	1.769	0	[0.12, 43.96]	[0.08, 29.04]	[0.18, 17.21]	[0.75, 369.09]	1	1	0.50	1	NA	NA
Cancer immunetherapy vs No cancer	9.07	2.41	10.61	0	[1.59, 51.66]	[0.28, 21.16]	[1.91, 58.86]	[0.53,33.58]	0.04	0.40	< 0.01	1	375.05(11.05) vs. 35.50 (71.38)	0.80
Cancer with active treatment vs Cancer without active treatment	1.16	0.97	1.49	1.59	[0.32, 4.17]	[0.34, 2.81]	[0.63, 3.52]	[0.42, 6.09]	1	1	0.38	0.49	111.33 (164.69) vs. 52.30 (101.58)	0.56

Cancer without active	2 23	2.87	2.44	11.91	[0.98-5.11]	[1 47 5 56]	[1.42, 4.21]	[3.28, 43.29]	0.06	<0.01	< 0.01	< 0.01	52.30 (101.58) vs 35.50 (71.38)	0.80
treatment vs No cancer	2.23	2.07	2.77	11.71	[0.50, 5.11]	[1.47, 5.50]	[1.42, 4.21]	[3.20, 43.27]	0.00	<0.01	\0.01	\0.01	32.30 (101.30) 18 33.30 (71.30)	0.00

Abbreviations: ICU=intensive care unit; IMV=invasive mechanical ventilation

 $Supplementary\ Table\ 3.\quad Hazard\ ratios\ and\ 95\%\ confidence\ intervals\ from\ Cox-regression\ models\ for\ risks\ of\ severe\ events$ 

	Hazard Ratio	95% CI lower	95% CI higher	p values
All Cancer	2.52	1.66	3.83	< 0.01
Cancer types				
Blood cancer	6.30	2.66	14.94	< 0.01
Lung cancer	2.59	1.34	5.01	< 0.01
Stomach cancer	2.45	0.89	6.72	0.08
Breast cancer	1.46	0.35	6.12	0.60
Cancer stage				
Metastatic cancer	2.48	1.19	5.14	0.01
Non-metastatic cancer	1.79	0.96	3.32	0.07
Lung cancer or lung met	tastasis			
Lung cancer	2.60	1.34	5.01	< 0.01
Other cancers with lung metastasis	2.58	1.26	5.29	< 0.01
Other cancers without lung metastasis	0.34	0.18	0.63	0.06
Cancer treatments				
Immunotherapy	4.82	1.73	13.48	< 0.01
Surgery	6.22	2.44	15.83	< 0.01
Chemotherapy	1.54	0.65	3.68	0.36
Radiotherapy	1.22	0.37	4.01	0.74
Targeted therapy	1.51	0.21	10.89	0.68

Hazard Ratio and 95% CI denoted the comparison between cancer subgroups and patients without cancer.

## Supplementary Table 4. Detailed information of 105 COVID-19 patients with cancer

Patient ID	Sex	Age	Comorbidities	Time*	Tumor type	Phase	Smoking history	Cancer treatments within 40 days	Last time of treatments	Severe events	Survival status
No.1	Male	69	Intestinal obstruction	2019.12	Peritoneal cancer	II	Former smoker			Yes	Dead
No.2	Male	66	Jaundice, Abdominal infection, Chest infection	2019.11	Gastric cancer	IV	Current smoker			No	Alive
No.3	Male	49	No	2020.01	Esophageal squamous cell carcinoma	Unknown	Never smoked			Yes	Alive
No.4	Male	65	No	2018.01	Gastric cancer	III	Never smoked			No	Alive
No.5	Male	72	Asthma	2016.09	Lung cancer	IV	Current smoker	Targeted therapy (EGFR-TKI) and PD-1 immunotherapy	2020.01.17	No	Alive
No.6	Male	73	Chronic bronchitis	2019.11	Laryngeal squamous cell carcinoma	IV	Current smoker	Radiotherapy	2020.01.22	Yes	Alive
No.7	Male	69	Coronary heart disease, Hypertension	2019.08	Lung cancer	I	Current smoker	Radiotherapy	2020.01.21	No	Alive
No.8	Female	55	No	2019.11	Glioblastoma	IV	Never smoked	Radiotherapy and chemotherapy	2020.02.06	No	Alive
No.9	Male	74	Duodenal ulcer, COPD, Hypertension, Coronary heart disease	2019.08	Esophageal cancer	IV	Current smoker	Radiotherapy	2020.01.23	No	Alive
No.10	Male	55	Hepatic encephalopathy, Gastrointestinal bleeding, Chronic viral hepatitis, Anemia	2014.01	Hepatocellular carcinoma	IV	Current smoker	Radiotherapy	2020.01.14	No	Alive
No.11	Male	66	Hypertension, Diabetes	2019.03	Lung squamous cell carcinoma	IV	Never smoked	Chemotherapy	2020.01.22	Yes	Alive
No.12	Male	67	Chronic bronchitis, Hypertension, Atrial fibrillation, Peptic ulcer, Chronic kidney disease	2019.12	Esophageal squamous cell carcinoma	III	Never smoked	Surgery	2020.01.01	Yes	Dead
No.13	Male	64	Cerebral infarction	2020.01	Myelodysplastic syndrome	Unknown	Current smoker			Yes	Alive
No.14	Male	83	Hypertension	2016	Meningioma	Unknown	Never smoked			Yes	Alive
No.15	Male	73	Hypertension	2020.01	Lung cancer	I	Current smoker	Surgery	2020.01.16	Yes	Alive
No.16	Female	48	No	2019.06	Breast cancer	II	Never smoked			No	Alive
No.17	Male	57	Prostatic hyperplasia, Male erectile dysfunction	2016.02	Lung cancer	IV	Current smoker	Radiotherapy and Targeted therapy (EGFR-TKI)	2020.01.18	No	Alive
No.18	Male	61	No	2019.12	Lung squamous cell carcinoma	IV	Current smoker	DP chemotherapy and PD-1 immunotherapy	2020.01.16	Yes	Dead
No.19	female	84	Hypertension, diabetes, lumbar compression fracture	2019.06	Lung cancer	Ib	Never smoked	Surgery	2020.01.14	Yes	Dead
No.20	male	69	Abdominal aortic aneurysm	2019.09	Lung adenocarcinoma	I	Never smoked	Radiotherapy and chemotherapy	2019.12.19	No	Alive
No.21	male	69	Prosopalgia	2019.11	Lung squamous cell carcinoma	IV	Former smoker	Chemotherapy and PD-1 immunotherapy	2020.01.13	No	Alive
No.22	male	65	Chronic viral hepatitis	2019.04	Lung cancer	III	Current smoker	••		No	Alive
No.23	female	76	Hypertension, renal insufficiency, hypothyroidism, cardiac insufficiency	Unknown	Multiple myeloma	Unknown	Never smoked			Yes	Dead

N	о.24 г	male	54	Incomplete ileus	2020.01	Rectal cancer	III	Never smoked	Surgery	2020.01.16	No	Alive
N	o.25 fe	emale	78	Hypertension, high heart disease, COPD, coronary heart disease, renal insufficiency	2014.06	Chronic granulocytic leukemia	ı В	Never smoked			Yes	Dead
N	o.26 r	male	61	Hypertension, diabetes	2018.05	Bladder cancer	III	Never smoked			Yes	Alive
N	o.27 fe	emale	50	No	2017.05	Lung cancer	IB	Never smoked			No	Alive
N	o.28 fe	emale	87	Hypertension	2009	Gastric cancer	IIIA	Never smoked			Yes	Alive
N	o.29 fe	emale	55	No	2018	Cervical cancer	I	Never smoked			No	Alive
N	o.30 fe	emale	70	Hypertension	Unknown	Colon cancer	II	Never smoked			No	Alive
N	o.31 fe	emale	69	No	Unknown	Gastric cancer	Unknown	Never smoked			No	Alive
N	o.32 fe	emale	59	No	2009	Breast cancer	IIA	Never smoked			No	Alive
N	o.33 fe	emale	48	No	2019.06	Breast cancer	II	Never smoked	Radiotherapy	2020.01.23	No	Alive
N	о.34 г	male	57	No	2015.12	Lung adenocarcinoma	IV	Current smoker	Concurrent targeted therapy (EGFR-TKI) with radiotherapy	2020.01.22	No	Alive
N	о.35 г	male	69	Prosopalgia	2019.11	Lung squamous cell carcinoma	IV	Never smoked	Radiotherapy and Chemotherapy	2020.01.13	No	Alive
N	o.36 r	male	69	Chronic viral hepatitis	2019.04	Lung cancer	IV	Current smoker	Chemotherapy and PD-1 immunotherapy	2019.01.05	Yes	Alive
		male	69	Chronic kidney disease	2019.09	Lung adenocarcinoma	I	Current smoker	Chemotherapy and Radiotherapy	2020.01.17	No	Alive
N	o.38 r	male	66	No	2019.08	Lung adenocarcinoma	IV	Used to smoke	PD-1 immunotherapy	2020.01.17	Yes	Alive
N	o.39 r	male	65	Coronary heart disease	2019.04	Bladder cancer	IV	Never smoked	Radiotherapy and Chemotherapy	2019.12.16	Yes	Dead
N	o.40 r	male	81	Hypertension	2019.09	Cancer of unknown primary	Unknown	Current smoker	PD-1 immunotherapy	2019.12.04	Yes	Dead
N	o.41 fe	emale	46	Bacteremia	2019.01	Rectal cancer	III	Never smoked			No	Alive
N	o.42 r	male	76	Intestinal obstruction	2018.11	Rectal cancer	IV	Current smoker			Yes	Alive
N	o.43 fe	emale	58	No	2020.1.2	Ovarian cancer	III	Never smoked	Chemotherapy	2020.01.15	No	Alive
N	o.44 fe	emale	74	Diabetes	2020.1.12	Cervical cancer	IIB	Never smoked	Chemotherapy	2020.01.20	No	Alive
N	o.45 r	male	26	No	Unknown	Testicular cancer	I	Never smoked			No	Alive
N	o.46 fe	emale	66	Hypertension, Hyperlipemia	Unknown	Breast cancer	II	Never smoked			Yes	Alive
N	o.47 fe	emale	52	Diabetes	Unknown	Thyroid carcinoma	I	Never smoked			No	Alive
N	о.48 г	male	50	Pulmonary tuberculosis, Abdominal infection, Biliary infection, Liver abscess	2015	Thyroid carcinoma	I	Current smoker			No	Alive
N	o.49 fe	emale	66	No	2019	Thyroid carcinoma	Unknown	Never smoked			Yes	Alive
N	o.50 r	male	83	No	2019.05	Prostate cancer	IV	Never smoked			No	Alive
N	o.51 fe	emale	29	No	2013.05	Thyroid carcinoma	I	Never smoked			No	Alive

No.52	female	32	No	2018.01	Thyroid carcinoma	I	Never smoked			No	Alive
No.53	male	76	No	2018	Prostate cancer	Unknown	Current smoker			No	Alive
No.54	female	80	Hypertension, Hyperlipidemia, Phlebothrombosis, Diabetes	2019.01	Lung adenocarcinoma	IIIA	Never smoked			Yes	Alive
No.55	Male	72	Hypertension	2019	Lung cancer	IV	Former smoker			Yes	Dead
No.56	Female	57	No	2019.12	Breast cancer	II	Never smoked	Chemotherapy	2020.01.27	No	Alive
No.57	Female	69	Chronic hepatitis	2018	Thyroid cancer	I	Never smoked			No	Alive
No.58	Female	60	No	2012	Cervical cancer	II	Never smoked			No	Alive
No.59	Female	72	Hypertension, heart disease	2013.06	Breast cancer	Unknown	Never smoked			No	Alive
No.60	Male	75	Hypertension	2009	Colon cancer	Unknown	Current smoker			No	Alive
No.61	Male	67	Hypothyroidism	Unknown	Liver cancer	Unknown	Never smoked			No	Alive
No.62	Female	52	Hypertension, Chronic renal failure	2016.03	Endometrial cancer	Ia	Never smoked			No	Alive
No.63	Male	64	No	2019.08	Gallbladder carcinoma	Unknown	Never smoked			No	Alive
No.64	Male	67	No	1994	Nasopharynx cancer	Unknown	Never smoked			No	Alive
No.65	Male	63	Hypertension	2010	Kidney cancer	Unknown	Never smoked			No	Alive
No.66	Male	34	No	2017	Thyroid cancer	Unknown	Never smoked			No	Alive
No.67	Female	59	No	2019.07	Colon cancer	Unknown	Never smoked	Chemotherapy	2020.01.01	No	Alive
No.68	Male	57	Cirrhosis, diabetes	2020.01	Nasopharynx cancer	Unknown	Current smoker	Chemotherapy	2020.01.14	No	Alive
No.69	Male	62	No	2015	Bladder cancer	Unknown	Never smoked			No	Alive
No.70	Female	66	No	2015	Thyroid cancer	Unknown	Never smoked			No	Alive
No.71	Male	60	No	2015	Multiple myeloma	Unknown	Never smoked			No	Alive
No.72	Female	64	No	Unknown	Gastric stromal tumor	Unknown	Never smoked			No	Alive
No.73	Female	66	No	2004	Ocular malignancy	Unknown	Never smoked			No	Alive
No.74	Male	61	Coronary heart disease, Hypertension	2020.01	Multiple myeloma	Unknown	Never smoked			No	Alive
No.75	Female	53	No	2019.9	Multiple myeloma	Unknown	Never smoked			No	Alive
No.76	Male	61	Diabetes, Hypertension	Unknown	Malignant lymphoma	IV	Never smoked			Yes	Dead
No.77	Female	54	No	2019.03	Lung carcinoma	II	Never smoked			Yes	Dead
No.78	Female	55	No	2016	Breast cancer	I	Never smoked			No	Alive
No.79	Female	38	No	2019	Breast cancer	II	Never smoked			No	Alive
No.80	Female	50	No	2019	Rectal carcinoma	IV	Current smoker			Yes	Dead
No.81	Male	67	Bronchitis	2017.12	Esophageal carcinoma	IIIA	Current smoker			Yes	Alive
No.82	Female	37	No	2018	Thyroid carcinoma	I	Former smoker			No	Alive
No.83	Female	45	No	2019.11	Cervical carcinoma	IIA	Never smoked	Surgery and Radiotherapy	2020.01.01	Yes	Alive
No.84	Male	35	No	2019.07	Glioma	Unknown	Never smoked			Yes	Alive

No.86   Female   49												
No.87   Male   62   Hypertension, Tuberculosis   2018.08   Esophageal carcinoma   I   Current smoker	No.85	Female	57	No	2019.11	Cervical carcinoma	Ib	Former smoker	Surgery	2020.01.10	No	Alive
No.88   Male   70   Coronary heart diseas, Choledochectasia   Choledochectasia   Choledochectasia   Choledochectasia   Choledochectasia   Choledochectasia   Choledochectasia   Choledochectasia   Current smoker   Choledochectasia   Current smoker   Choledochectasia   Current smoker   Choledochectasia   Current smoker   Cerebrovascular disease   2017.06   Breast cancer   II   Never smoked   No.91   Female   57   Hypertension   2019.02   Breast cancer   II   Never smoked   No.92   Female   56   No   2019.04   Cervical carcinoma   IB2   Never smoked   No.93   Male   58   No   2019.06   Rectal carcinoma   IV   Former smoker   Chemotherapy   2020.01   No.94   Male   71   Coronary heart disease   2019.10   Lung squamous cell   IV   Never smoked   Chemotherapy   2020.01   No.95   Female   67   Diabetes,   2019.12   Breast cancer   III   Current smoker   Surgery   2020.01   No.96   Male   70   No   2019.11   gastric carcinoma   III   Never smoked   Chemotherapy   2020.01   No.97   Male   70   Hypertension   2014   Esophageal carcinoma   II   Current smoker   No.98   Female   42   Hypertension   2020.01   Pancreatic cancer   III   Never smoked   Surgery   2020.01   No.99   Male   43   No   2011   gastric carcinoma   I   Never smoked   Surgery   2020.01   No.90   Male   69   No   2015   Lung cancer   III   Current smoker   No.100   Male   62   Cerebral hemorrhage, Uremia,   2020.01   Lung cancer   III   Current smoker   No.100   Male   63   Cerebral hemorrhage, Uremia,   2020.01   Lung cancer   III   Never smoked   No.100   N	No.86	Female	49	No	2019.11	Renal carcinoma	I	Never smoked			No	Alive
No.89   Male   44   No   2019.12   Thyroid carcinoma   I   Current smoker	No.87	Male	62	Hypertension, Tuberculosis	2018.08	Esophageal carcinoma	I	Current smoker			No	Alive
No.90   Female   72   Cerebrovascular disease   2017.06   Breast cancer   II   Never smoked	No.88	Male	70	-	2019.06	Gastric carcinoma	I	Current smoker			No	Alive
No.91   Female   57	No.89	Male	44	No	2019.12	Thyroid carcinoma	I	Current smoker			No	Alive
No.92 Female 56 No 2019.04 Cervical carcinoma IB2 Never smoked  No.93 Male 58 No 2019.06 Rectal carcinoma IV Former smoker Chemotherapy 2020.01  No.94 Male 71 Coronary heart disease 2019.10 Lung squamous cell IV Never smoked Chemotherapy 2020.01  Hypertension Carcinoma III Current smoker Surgery 2020.01  No.95 Female 67 Diabetes, 2019.12 Breast cancer III Current smoker Chemotherapy 2020.01  No.96 Male 70 No 2019.11 gastric carcinoma IIIA Never smoked Chemotherapy 2020.01  No.97 Male 70 Hypertension 2014 Esophageal carcinoma II Current smoker  No.98 Female 42 Hypertension 2020.01 Pancreatic cancer III Never smoked Surgery 2020.01  No.99 Male 43 No 2011 gastric carcinoma I Never smoked  No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hypertlension 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked  Targeted therapy (Imatinib Mesylate)	No.90	Female	72	Cerebrovascular disease	2017.06	Breast cancer	II	Never smoked			No	Alive
No.93 Male 58 No 2019.06 Rectal carcinoma IV Former smoker Chemotherapy 2020.01  No.94 Male 71 Coronary heart disease Hypertension Carcinoma IV Never smoked Chemotherapy 2020.01  No.95 Female 67 Diabetes, Hypertension III Current smoker Surgery 2020.01  No.96 Male 70 No 2019.11 gastric carcinoma IIIA Never smoked Chemotherapy 2020.01  No.97 Male 70 Hypertension 2014 Esophageal carcinoma II Current smoker  No.98 Female 42 Hypertension 2020.01 Pancreatic cancer III Never smoked Surgery 2020.01  No.99 Male 43 No 2011 gastric carcinoma I Never smoked Surgery 2020.01  No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hypertlension 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked  Targeted therapy (Imatinib Mesylate)	No.91	Female	57	Hypertension	2019.02	Breast cancer	I	Never smoked			Yes	Alive
No.94 Male 71 Coronary heart disease Hypertension 2019.10 Lung squamous cell carcinoma III Current smoker Surgery 2020.01  No.95 Female 67 Diabetes, 2019.12 Breast cancer III Current smoker Surgery 2020.01  No.96 Male 70 No 2019.11 gastric carcinoma IIIA Never smoked Chemotherapy 2020.01  No.97 Male 70 Hypertension 2014 Esophageal carcinoma II Current smoker  No.98 Female 42 Hypertension 2020.01 Pancreatic cancer III Never smoked Surgery 2020.01  No.99 Male 43 No 2011 gastric carcinoma I Never smoked Surgery 2020.01  No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hypertipemia 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked  Targeted therapy (Imatinib Mesylate)	No.92	Female	56	No	2019.04	Cervical carcinoma	IB2	Never smoked			Yes	Alive
Hypertension   Carcinoma	No.93	Male	58	No	2019.06	Rectal carcinoma	IV	Former smoker	Chemotherapy	2020.01.01	Yes	Alive
No.96   Male   70   No   2019.11   gastric carcinoma   IIIA   Never smoked   Chemotherapy   2020.01	No.94	Male	71	3	2019.10	e i	IV	Never smoked	Chemotherapy	2020.01.06	Yes	Alive
No.97 Male 70 Hypertension 2014 Esophageal carcinoma II Current smoker  No.98 Female 42 Hypertension 2020.01 Pancreatic cancer III Never smoked Surgery 2020.01  No.99 Male 43 No 2011 gastric carcinoma I Never smoked  No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hypertension  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked  Targeted therapy (Imatinib Mesylate)	No.95	Female	67	,	2019.12	Breast cancer	III	Current smoker	Surgery	2020.01.01	Yes	Alive
No.98 Female 42 Hypertension 2020.01 Pancreatic cancer III Never smoked Surgery 2020.01  No.99 Male 43 No 2011 gastric carcinoma I Never smoked  No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hyperlipemia 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib Mesylate)	No.96	Male	70	No	2019.11	gastric carcinoma	IIIA	Never smoked	Chemotherapy	2020.01.01	Yes	Alive
No.99 Male 43 No 2011 gastric carcinoma I Never smoked  No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hyperlipemia 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib Mesylate)	No.97	Male	70	Hypertension	2014	Esophageal carcinoma	II	Current smoker			Yes	Alive
No.100 Male 69 No 2015 Lung cancer II Current smoker  No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hyperlipemia 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib Mesylate)	No.98	Female	42	Hypertension	2020.01	Pancreatic cancer	III	Never smoked	Surgery	2020.01.01	No	Alive
No.101 Male 62 Cerebral hemorrhage, Uremia, 2020.01 Lung cancer III Current smoker  No.102 Male 37 Hyperlipemia 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib Mesylate)	No.99	Male	43	No	2011	gastric carcinoma	I	Never smoked			Yes	Alive
No.102 Male 37 Hyperlipemia 2018.06 Sigmoid colon cancer II Never smoked  No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib Mesylate)	No.100	Male	69	No	2015	Lung cancer	II	Current smoker			Yes	Alive
No.103 Female 70 Coronary heart disease, Hypertension 2002 Thyroid cancer I Never smoked  No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib 2020.02 Mesylate)	No.101	Male	62	•	2020.01	Lung cancer	III	Current smoker			No	Alive
No.104 Male 51 No 2015 Leukemia II Never smoked Targeted therapy (Imatinib 2020.02 Mesylate)	No.102	Male	37	Hyperlipemia	2018.06	Sigmoid colon cancer	II	Never smoked			Yes	Alive
Mesylate)	No.103	Female	70	Coronary heart disease, Hypertension	2002	Thyroid cancer	I	Never smoked			Yes	Alive
No.105 Female 55 Hypertension 2019.07 Nasopharyngeal lymphoma II Never smoked	No.104	Male	51	No	2015	Leukemia	II	Never smoked		2020.02.08	No	Alive
	No.105	Female	55	Hypertension	2019.07	Nasopharyngeal lymphoma	II	Never smoked			No	Alive

Time\*: Time of Preliminary Diagnosis; COPD=Chronic Obstructive Pulmonary Disease; EGFR-TKI=Epidermal growth factor receptor-tyrosine kinase; PD-1=Programmed cell death protein 1.

Supplementary Table 5. Logistic regression results of COVID-19 patients with cancer adjusted by immunosuppression levels

Outcome	Odds Ratio	95%CI lower	95%CI upper	p value	Features
	16.642	-4.653	37.937	0.238	Age
	0.575	-3.925	5.074	0.505	Sex
	1.755	-3.240	6.749	0.548	Diabetes
Death	2.477	-1.683	6.638	0.228	Hypertension
	2.404	-6.866	11.674	0.572	COPD
	1.941	-2.636	6.518	0.434	Smoking
	1.184	-1.368	3.736	0.522	Immunosuppression levels
	2.660	-8.587	13.907	0.576	Age
	1.039	-2.603	4.680	0.951	Sex
	2.914	-1.333	7.161	0.167	Diabetes
ICU	2.279	-1.335	5.893	0.178	Hypertension
	1.938	-7.073	10.949	0.664	COPD
	1.032	-2.732	4.795	0.962	Smoking
	1.238	-1.201	3.676	0.329	Immunosuppression levels
	6.993	-2.350	16.336	0.213	Age
	1.019	-2.425	4.463	0.974	Sex
C	2.611	-1.838	7.059	0.242	Diabetes
Severe	3.936	0.505	7.367	0.014	Hypertension
symptoms	0.343	-8.636	9.323	0.482	COPD
	1.767	-1.728	5.261	0.325	Smoking
	1.480	-0.934	3.894	0.060	Immunosuppression levels
	0.350	-18.384	19.085	0.642	Age
	1.346	-2.967	5.659	0.706	Sex
	4.598	-0.187	9.384	0.087	Diabetes
IMV	2.636	-1.809	7.081	0.236	Hypertension
	NA	NA	NA	NA	COPD
	0.850	-3.768	5.469	0.850	Smoking
	1.448	-1.156	4.053	0.192	Immunosuppression levels

Abbreviations: ICU=intensive care unit; IMV=invasive mechanical ventilation; COPD=Chronic Obstructive Pulmonary Disease. Immunosuppression level was evaluated according to WHO guidelines.