



Severity of lung involvement on chest X-rays in SARS-coronavirus-2 infected patients as a possible tool to predict clinical progression: an observational retrospective analysis of the relationship between radiological, clinical, and laboratory data

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Table S1. Logistic regression analysis assessing the relationship of demographic, clinical, laboratory, and radiological variables with severe outcomes (intubation/noninvasive ventilation/death).

Variable	Univariate analysis		Multivariate analysis	
	OR (95% CI)	p	OR (95% CI)	p
Male	1.7 (0.8-3.3)	0.15	1.6 (0.5-6.0)	0.46
Age, years	1.4 (0.9-2.4)	0.17	0.9 (0.3-2.6)	0.87
Current/former smoker	1.1 (0.5-2.4)	0.76	-	-
Comorbidity	1.2 (0.5-3.0)	0.68	-	-
BMI > 30 kg/m ²	1.9 (0.8-4.9)	0.16	-	-
COPD	1.5 (0.5-4.3)	0.50	-	-
Diabetes	3.1 (1.4-6.8)	0.006	4.1 (1.0-16.9)	0.049
Hypertension	1.1 (0.6-2.2)	0.71	-	-
CHD	1.4 (0.6-3.2)	0.41	-	-
Liver disease	1.9 (0.3-10.8)	0.46	-	-
Cancer	0.9 (0.4-2.2)	0.85	-	-
Kidney disease	1.0 (0.4-2.5)	0.94	-	-
Immunodeficiency	-	-	-	-
Symptoms	2.2 (0.4-12.4)	0.38	-	-
Fever	1.8 (0.7-5.0)	0.25	-	-
Cough	1.7 (0.9-3.3)	0.13	-	-
Sputum	1.4 (0.5-3.9)	0.52	-	-
Dyspnea	3.0 (1.5-6.0)	0.002	1.5 (0.5-4.7)	0.54
RT-PCR	-	-	-	-
Chest X-ray score	No lung involvement	-	-	-
	Lung involvement, 1-25%	0.5 (0.3-1.1)	-	-
	Lung involvement, 26-50%	0.7 (0.3-1.6)	-	-
	Lung involvement, 51-75%	3.0 (1.2-7.7)	-	-
	Lung involvement, 76-100%	5.5 (1.5-20.0)	2.0 (0.2-20.4)	0.54
pH	-	-	-	-
PaO ₂ , mmHg	1.0 (1.0-1.0)	0.18	-	-
PaCO ₂ , mmHg	0.9 (0.8-1.09)	0.05	-	-
SaO ₂ , %	0.8 (0.8-0.9)	< 0.0001	0.9 (0.8-1.1)	-
HCO ₃ ⁻ , mmol/L	1.0 (0.8-1.1)	0.56	-	-
PaO ₂ /FiO ₂ ratio	0.98 (0.98-0.99)	< 0.0001	1.0 (1.0-1.0)	0.65
WBC/mL	1.0 (1.0-1.0)	0.04	1.0 (1.0-1.0)	0.48
CRP, mg/L	1.0 (1.0-1.0)	0.008	1.0 (1.0-1.0)	0.49
Chest X-ray score	Lung involvement, 1-25%	0.3 (0.1-0.9)	-	-
	Lung involvement, 26-50%	0.3 (0.1-1.0)	-	-
	Lung involvement, 51-75%	1.7 (0.6-4.7)	-	-
	Lung involvement, 76-100%	3.6 (1.2-11.0)	-	-
Mild hypoxia	0.6 (0.2-1.4)	0.22	-	-
Moderate hypoxia	35.6 (4.6-277.8)	0.001	19.0 (1.8-205.7)	0.02
Severe hypoxia	3.2 (0.8-12.4)	0.10	-	-
Oxygen therapy	2.2 (1.1-4.6)	0.03	-	-

BMI: body mass index; CHD: coronary heart disease; WBC: white blood cell; and CRP: C-reactive protein.

Table S2. Logistic regression analysis showing the relationship of demographic, clinical, laboratory, and radiological variables with the need for intubation.

Variable	Univariate analysis		Multivariate analysis	
	OR (95% CI)	p	OR (95% CI)	p
Male	4.8 (1.6-14.9)	0.006	1.1 (0.1-22.3)	0.96
Age, years	1.0 (1.0-1.0)	0.57	0.8 (0.7-1.0)	0.046
Current/former smoker	2.5 (1.1-6.0)	0.04	1.5 (0.1-16.8)	0.73
Comorbidity	0.8 (0.3-2.5)	0.76	-	-
BMI > 30 kg/m ²	2.7 (1.0-7.3)	0.047	0.5 (0.0-9.8)	0.64
COPD	1.6 (0.5-5.5)	0.46	-	-
Diabetes	3.2 (1.4-7.8)	0.009	94.7 (1.3-7,060.0)	0.04
Hypertension	1.1 (0.5-2.7)	0.78	-	-
CHD	2.3 (0.9-5.9)	0.08	-	-
Liver disease	2.2 (0.4-12.5)	0.39	-	-
Cancer	0.5 (0.2-2.0)	0.35	-	-
Kidney disease	0.4 (0.1-1.7)	0.19	-	-
Immunodeficiency	-	-	-	-
Symptoms	-	-	-	-
Fever	4.9 (0.6-38.4)	0.13	-	-
Cough	1.6 (0.7-3.7)	0.29	-	-
Sputum	2.6 (0.9-7.8)	0.09	-	-
Dyspnea	2.2 (0.9-5.4)	0.09	-	-
RT-PCR	-	-	-	-
Chest X-ray score	No lung involvement	-	-	-
	Lung involvement, 1-25%	0.7 (0.3-1.8)	-	-
	Lung involvement, 26-50%	0.4 (0.1-1.3)	-	-
	Lung involvement, 51-75%	2.0 (0.8-5.5)	-	-
	Lung involvement, 76-100%	3.1 (1.1-8.8)	0.4 (0.0-22.2)	0.65
pH	-	-	-	-
PaO ₂ , mmHg	0.97 (0.94-1.00)	0.03	0.9 (0.9-1.0)	0.11
PaCO ₂ , mmHg	0.9 (0.8-1.0)	0.11	-	-
SaO ₂ , %	0.8 (0.8-0.9)	< 0.0001	0.8 (0.6-1.0)	0.02
HCO ₃ , mmol/L	0.8 (0.7-1.0)	0.09	-	-
PaO ₂ /FiO ₂ ratio	0.99 (0.99-1.00)	0.002	1.0 (1.0-1.0)	0.65
WBC/mL	1.0 (1.0-1.0)	0.69	-	-
CRP, mg/L	1.0 (1.0-1.0)	0.84	-	-
Chest X-ray	Lung involvement, 1-25%	0.1 (0.0-0.9)	-	-
	Lung involvement, 26-50%	0.2 (0.0-1.4)	-	-
	Lung involvement, 51-75%	0.7 (0.2-2.0)	-	-
	Lung involvement, 76-100%	7.9 (2.7-23.0)	< 0.0001	-
Mild hypoxia	0.1 (0.0-0.8)	0.03	-	-
Moderate hypoxia	28.5 (8.3-98.2)	< 0.0001	55.4 (3.4-892.7)	0.005
Severe hypoxia	1.0 (0.3-4.1)	0.97	-	-

BMI: body mass index; CHD: coronary heart disease; WBC: white blood cell; and CRP: C-reactive protein.

Table S3. Logistic regression analysis showing the relationship of demographic, clinical, laboratory, radiological variables with the need for noninvasive ventilation.

Variables	Univariate analysis		Multivariate analysis	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Male	1.5 (0.7-3.3)	0.30	2.8 (0.0-184.6)	0.63
Age, years	1.0 (1.0-1.0)	0.18	1.0 (0.8-1.1)	0.69
Current/former smoker	1.1 (0.5-2.4)	0.89	-	-
Comorbidity	1.1 (0.4-3.0)	0.88	-	-
BMI > 30 kg/m ²	2.4 (1.0-6.1)	0.06	-	-
COPD	1.0 (0.3-3.2)	0.95	-	-
Diabetes	2.2 (1.0-4.9)	0.05	-	-
Hypertension	0.9 (0.4-1.9)	0.82	-	-
CHD	0.3 (0.1-0.9)	0.03	-	-
Liver disease	2.8 (0.5-14.5)	0.22	-	-
Cancer	0.9 (0.3-2.4)	0.78	-	-
Kidney disease	0.5 (0.2-1.6)	0.24	-	-
Immunodeficiency	-	-	-	-
Symptoms	-	-	-	-
Fever	7.2 (0.9-56.2)	0.06	-	-
Cough	1.8 (0.9-4.0)	0.12	-	-
Sputum	1.2 (0.4-3.7)	0.74	-	-
Dyspnea	1.2 (0.5-2.5)	0.71	-	-
RT-PCR	-	-	-	-
Chest X-ray score	No lung involvement	-	-	-
	Lung involvement, 1-25%	1.0 (0.5-2.2)	-	-
	Lung involvement, 26-50%	0.9 (0.4-2.3)	-	-
	Lung involvement, 51-75%	1.6 (0.6-3.9)	-	-
	Lung involvement, 76-100%	1.0 (0.3-3.1)	-	-
pH	-	-	-	-
PaO ₂ , mmHg	1.0 (1.0-1.0)	0.06	-	-
PaCO ₂ , mmHg	0.9 (0.8-1.0)	0.14	-	-
SaO ₂ , %	1.0 (0.9-1.1)	0.94	-	-
HCO ₃ , mmol/L	1.1 (0.9-1.3)	0.49	-	-
PaO ₂ /FiO ₂ ratio	1.0 (1.0-1.0)	0.049	1.0 (1.0-1.0)	0.12
WBC/mL	1.0 (1.0-1.0)	0.24	-	-
CRP, mg/L	1.0 (1.0-1.0)	0.01	1.0 (1.0-1.1)	1.00
Chest X-ray	Lung involvement, 1-25%	0.7 (0.2-2.2)	-	-
	Lung involvement, 26-50%	0.5 (0.1-2.0)	-	-
	Lung involvement, 51-75%	1.9 (0.7-5.1)	-	-
	Lung involvement, 76-100%	1.0 (0.4-2.5)	-	-
Mild hypoxia	1.9 (0.7-4.8)	0.20	-	-
Moderate hypoxia	1.1 (0.4-3.1)	0.79	-	-
Severe hypoxia	1.6 (0.5-5.3)	0.47	-	-

BMI: body mass index; CHD: coronary heart disease; WBC: white blood cell; and CRP: C-reactive protein.

Table S4. Logistic regression analysis showing the relationship of demographic, clinical, laboratory, radiological variables with death.

Variables		Univariate analysis		Multivariate analysis	
		OR (95% CI)	p-value	OR (95% CI)	p-value
Male		0.8 (0.4-1.9)	0.65	0.8 (0.1-4.5)	0.80
Age, years		1.1 (1.1-1.2)	< 0.0001	1.1 (1.0-1.2)	0.03
Current/former smoker		0.5 (0.2-1.4)	0.20	-	-
Comorbidity		3.1 (0.7-14.1)	0.14	-	-
BMI > 30 kg/m ²		0.3 (0.1-1.5)	0.14	-	-
COPD		1.5 (0.4-5.1)	0.53	-	-
Diabetes		1.6 (0.7-3.9)	0.29	-	-
Hypertension		2.3 (0.9-5.6)	0.07	-	-
CHD		2.8 (1.1-7.1)	0.03	0.9 (0.2-4.5)	0.86
Liver disease		-	-	-	-
Cancer		1.6 (0.6-4.5)	0.39	-	-
Kidney disease		2.7 (1.0-7.3)	0.05	-	-
Immunodeficiency		-	-	-	-
Symptoms		-	-	-	-
Fever		0.5 (0.2-1.3)	0.15	-	-
Cough		0.8 (0.4-1.9)	0.61	-	-
Sputum		0.8 (0.2-3.0)	0.75	-	-
Dyspnea		2.7 (1.1-7.0)	0.04	1.3 (0.2-7.5)	0.75
RT-PCR		-	-	-	-
Chest X-ray score	No lung involvement	-	-	-	-
	Lung involvement, 1-25%	0.3 (0.1-0.8)	0.02	-	-
	Lung involvement, 26-50%	0.9 (0.3-2.5)	0.88	-	-
	Lung involvement, 51-75%	1.3 (0.5-3.7)	0.61	-	-
	Lung involvement, 76-100%	7.1 (2.5-20.4)	< 0.0001	2.9 (0.5-18.4)	0.26
pH		-	-	-	-
PaO ₂ , mmHg		0.93 (0.89-0.98)	0.002	1.0 (0.9-1.1)	0.73
PaCO ₂ , mmHg		1.0 (0.9-1.1)	0.77	-	-
SaO ₂ , %		0.9 (0.9-1.0)	0.001	0.9 (0.8-1.0)	0.21
HCO ₃ , mmol/L		0.9 (0.6-1.1)	0.15	-	-
PaO ₂ /FiO ₂ ratio		1.0 (1.0-1.0)	0.002	1.0 (1.0-1.0)	0.85
WBC/mL		1.0 (1.0-1.0)	0.002	1.0 (1.0-1.0)	0.93
CRP, mg/L		1.0 (1.0-1.0)	0.08	-	-
Chest X-ray	Lung involvement, 1-25%	-	-	-	-
	Lung involvement, 26-50%	-	-	-	-
	Lung involvement, 51-75%	3.1 (0.8-12.6)	0.12	-	-
	Lung involvement, 76-100%	1.6 (0.4-6.5)	0.51	-	-
Mild hypoxia		0.1 (0.0-1.1)	0.06	-	-
Moderate hypoxia		2.2 (0.7-6.4)	0.17	-	-
Severe hypoxia		7.7 (2.2-27.3)	0.001	1.3 (0.1-23.1)	0.84

BMI: body mass index; CHD: coronary heart disease; WBC: white blood cell; and CRP: C-reactive protein.