

## **The association between alveolar-arterial oxygen tension difference and the severity of COVID-19 in patients**

Canbin Xie<sup>1</sup>, Jiayi Deng<sup>1</sup>, Fanglin Li<sup>1</sup>, Chenfang Wu<sup>1</sup>, Min Xu<sup>1</sup>, Bo Yu<sup>1</sup>, Guobao Wu<sup>1</sup>, Yanjun Zhong<sup>1</sup>, Da Tang<sup>1\*</sup>, Jinxiu Li<sup>1\*</sup>

### **Author affiliations:**

<sup>1</sup>Critical Care Medicine, The Second Xiangya Hospital, Central South University, Changsha, China.

First author: Canbin Xie

Correspondence: \*Da Tang, [darmuyu@qq.com](mailto:darmuyu@qq.com) (Lead contact) or \*Jinxiu Li, [jinxiuli2021@csu.edu.cn](mailto:jinxiuli2021@csu.edu.cn)

**Supplementary table 1 Major baseline characteristics and outcomes of COVID-19 patients with normal P<sub>A-a</sub>O<sub>2</sub> and abnormal P<sub>A-a</sub>O<sub>2</sub> after matching with age**

	Normal P <sub>A-a</sub> O <sub>2</sub> (n=82)	Abnormal P <sub>A-a</sub> O <sub>2</sub> (n=82)	<i>P</i> value
Gender (male/female)	43/39	40/42	0.755
Age, y, M (IQR)	41 (31, 59.25)	41 (32, 59.50)	0.862
Smoking (n,)	8	7	0.786
Drinking (n,)	5	2	0.440
<b>Symptoms</b>			
Fever (n)	56	66	0.074
Fatigue (n)	28	45	0.008
Cough (n)	61	71	0.106
Shortness of breath	21	34	0.032
Expectoration (n)	38	37	0.875
Hemoptysis (n)	2	2	1.000
Pharyngalgia (n)	13	14	0.833
Vomiting (n)	11	7	0.318
Diarrhea (n)	20	22	0.720
Abdominal pain (n)	6	2	0.277
Nausea (n)	9	12	0.483
Anorexia (n)	39	37	0.754
Myalgia (n)	8	12	0.340
Chill (n)	11	10	0.815
Dizziness (n)	12	12	1.000
Headache (n)	11	14	0.515
Hypertension (n)	10	11	0.815
Cardiovascular (n)	6	2	0.277
Diabetes (n)	7	2	0.170
<b>Outcomes</b>			
Severe event (n)	9	21	0.015
Virus shedding time (days, IQR)	17 (13, 23.5)	20.5 (13.75, 29.25)	0.042
Length of hospital stay (days, IQR)	15 (11, 23)	19 (13, 28.25)	0.016

IQR: interquartile range.

**Supplementary Table 2 Association of  $P_{A-a}O_2$  and disease severity in the Logistic regression model in COVID-19 patients matched with age**

Variables	Multivariate logistic regression analysis						
	B	SE	Wald	<i>P</i>	Exp (B)	95% CI	
						Lower	Upper
PA-aO <sub>2</sub>	1.263	0.21	5.880	0.015*	3.535	1.274	9.807
Gender	NA	NA	NA	NA	NA	NA	NA
Hypertension	2.185	0.634	11.864	0.001*	8.891	2.564	30.830
Cardiovascular disease	NA	NA	NA	NA	NA	NA	NA
Diabetes	NA	NA	NA	NA	NA	NA	NA
Smoking	NA	NA	NA	NA	NA	NA	NA
Alcohol	NA	NA	NA	NA	NA	NA	NA

\* means a significant difference; NA, not available.