

## SUPPLEMENTARY DATA

# Symptom Burden among Older COVID-19 Survivors Two Years after Hospital Discharge

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**Supplementary Table 1.** Symptoms during hospitalization vs. 2-year follow-up according to disease severity.

Symptoms	Participants (N=1212)			Severe (N=422)			Nonsevere(N=790)			P value (2-year Severe vs. Nonsevere)
	hospitalization	2-year	P value	hospitalization	2-year	P value	hospitalization	2-year	P value	
Any one of the following symptoms	1151(95.0)	259(21.4)	<0.001	407(96.4)	107(25.4)	<0.001	744(94.2)	152(19.2)	<0.001	0.01
Fatigue	723(59.7)	113(9.3)	<0.001	255(60.4)	42(10.0)	<0.001	468(59.2)	71(9.0)	<0.001	0.58
Sweating	-	11(0.9)	-	-	3(0.7)	-	-	8(1.0)	-	0.76 <sup>a</sup>
Chest tightness	394(32.5)	27(2.2)	<0.001	144(34.1)	14(3.3)	<0.001	250(31.6)	13(1.6)	<0.001	0.06
Anxiety	-	90(7.4)	-	-	43(10.2)	-	-	47(5.9)	-	0.01
Myalgia	337(27.8)	30(2.5)	<0.001	109(25.8)	14(3.3)	<0.001	228(28.9)	16(2.0)	<0.001	0.17
Palpitation	-	2(0.2)	-	-	2(0.5)	-	-	0	-	0.12 <sup>a</sup>
Cough	834(68.8)	26(2.1)	<0.001	304(72.0)	9(2.1)	<0.001	530(67.1)	17(2.2)	<0.001	0.98
Short of breath	559(46.1)	7(0.6)	<0.001	220(52.1)	2(0.5)	<0.001	339(42.9)	5(0.6)	<0.001	1.00 <sup>a</sup>
Dizziness	35(2.9)	9(0.7)	<0.001	14(3.3)	4(0.9)	0.02	21(2.7)	5(0.6)	0.002	0.73 <sup>a</sup>
Expectoration	208(17.2)	24(2.0)	<0.001	91(21.6)	7(1.7)	<0.001	117(14.8)	17(2.2)	<0.001	0.56
Dyspnea	102(8.4)	30(2.5)	<0.001	68(16.1)	11(2.6)	<0.001	34(4.3)	19(2.4)	0.04	0.83
Headache	28(2.3)	7(0.6)	<0.001	9(2.1)	1(0.2)	0.01	19(2.4)	6(0.8)	0.009	0.43 <sup>a</sup>
Edema of lower limbs	-	6(0.5)	-	-	2(0.5)	-	-	4(0.5)	-	1.00 <sup>a</sup>
Taste change	-	1(0.1)	-	-	0	-	-	1(0.1)	-	1.00 <sup>a</sup>
Smell reduction	-	4(0.3)	-	-	0	-	-	4(0.5)	-	0.30 <sup>a</sup>
Sore throat	63(5.2)	3(0.2)	<0.001	18(4.3)	0	-	45(5.7)	3(0.4)	0.06	0.56 <sup>a</sup>
Anorexia	668(55.1)	3(0.2)	<0.001	234(55.5)	2(0.5)	<0.001	434(54.9)	1(0.1)	0.02	0.28 <sup>a</sup>
Diarrhea	81(6.7)	7(0.6)	<0.001	28(6.6)	2(0.5)	<0.001	53(6.7)	5(0.6)	0.62	1.00 <sup>a</sup>
Hemoptysis	10(0.8)	0	0.002	4(0.9)	0	0.12 <sup>a</sup>	6(0.8)	0	0.03 <sup>a</sup>	-
Nausea	35(2.9)	3(0.2)	<0.001	12(2.8)	0	<0.001	23(2.9)	3(0.4)	<0.001	0.56 <sup>a</sup>
Chill	23(1.9)	1(0.1)	<0.001	13(3.1)	0	<0.001	10(1.3)	1(0.1)	0.006	1.00 <sup>a</sup>
Vomiting	30(2.5)	1(0.1)	<0.001	15(3.6)	0	<0.001	15(1.9)	1(0.1)	<0.001	1.00 <sup>a</sup>
Alopecia	-	3(0.2)	-	-	0	-	-	3(0.4)	-	0.56 <sup>a</sup>

a, Fisher's exact test. The rest of the statistical tests were calculated with the Pearson's  $\chi^2$  test.

**Supplementary Table 2.** Symptoms at 1-year follow-up vs. 2-year follow-up according to disease severity

Symptoms	Participants(N=890)			Severe(N=322)			Nonsevere(N=568)			P value (2-year Severe vs. Nonsevere)
	1-year	2-year	P value	1-year	2-year	P value	1-year	2-year	P value	
Any one of the following symptoms	437(49.1)	194(21.8)	<0.001	177(55.0)	81(25.2)	<0.001	260(45.8)	113(19.9)	<0.001	0.07
Fatigue	273(30.7)	83(9.3)	<0.001	115(35.7)	28(8.7)	<0.001	158(27.8)	55(9.7)	<0.001	0.63
Sweating	174(19.6)	11(1.2)	<0.001	76(23.6)	3(0.9)	<0.001	98(17.3)	8(1.4)	<0.001	0.76 <sup>a</sup>
Chest tightness	134(15.1)	23(2.6)	<0.001	64(19.9)	12(3.7)	<0.001	70(12.3)	11(1.9)	<0.001	0.11
Anxiety	100(11.2)	51(5.7)	<0.001	41(12.7)	28(8.7)	0.10	59(10.4)	23(4.0)	<0.001	0.004
Myalgia	74(8.3)	29(3.3)	<0.001	34(10.6)	13(4.0)	0.001	40(7.0)	16(2.8)	0.001	0.32
Palpitation	48(5.4)	2(0.2)	<0.001	19(5.9)	2(0.6)	<0.001	29(5.1)	0	<0.001	0.13 <sup>a</sup>
Cough	48(5.4)	24(2.7)	0.004	26(8.1)	9(2.8)	0.003	22(3.9)	15(2.6)	0.24	0.89
Short of breath	40(4.5)	6(0.7)	<0.001	22(6.8)	2(0.6)	<0.001	18(3.2)	4(0.7)	0.003	1.00 <sup>a</sup>
Dizziness	38(4.3)	9(1.0)	<0.001	13(4.0)	4(1.2)	0.03	25(4.4)	5(0.9)	<0.001	0.73 <sup>a</sup>
Expectoration	38(4.3)	23(2.6)	0.05	21(6.5)	7(2.2)	0.007	17(3.0)	16(2.8)	0.86	0.56
Dyspnea	32(3.6)	30(3.4)	0.80	17(5.3)	11(3.4)	0.25	15(2.6)	19(3.3)	0.49	0.96
Headache	21(2.4)	7(0.8)	0.008	12(3.7)	1(0.3)	0.002	9(1.6)	6(1.1)	0.44	0.43 <sup>a</sup>
Edema of lower limbs	18(2.0)	5(0.6)	0.006	10(3.1)	2(0.6)	0.02	8(1.4)	3(0.5)	0.13	1.00 <sup>a</sup>
Taste change	18(2.0)	1(0.1)	<0.001	8(2.5)	0	0.01	10(1.8)	1(0.2)	0.006	1.00 <sup>a</sup>
Smell reduction	16(1.8)	4(0.4)	0.007	9(2.8)	0	0.006	7(1.2)	4(0.7)	0.36	0.30 <sup>a</sup>
Sore throat	8(0.9)	2(0.2)	0.06	5(1.6)	0	0.12 <sup>a</sup>	3(0.5)	2(0.4)	1.00 <sup>a</sup>	0.54 <sup>a</sup>
Anorexia	7(0.8)	2(0.2)	0.18 <sup>a</sup>	2(0.6)	1(0.3)	1.00 <sup>a</sup>	5(0.9)	1(0.2)	0.22 <sup>a</sup>	1.00 <sup>a</sup>
Diarrhea	5(0.6)	7(0.8)	0.56	1(0.3)	2(0.6)	1.00 <sup>a</sup>	4(0.7)	5(0.9)	1.00 <sup>a</sup>	1.00 <sup>a</sup>
Hemoptysis	0	0	-	0	0	-	0	0	-	-
Nausea	1(0.1)	3(0.3)	0.63 <sup>a</sup>	0	0	-	1(0.2)	3(0.5)	0.62 <sup>a</sup>	0.56 <sup>a</sup>
Chill	1(0.1)	1(0.1)	1.00 <sup>a</sup>	0	0	-	1(0.2)	1(0.2)	1.00 <sup>a</sup>	1.00 <sup>a</sup>
Vomiting	1(0.1)	1(0.1)	1.00 <sup>a</sup>	0	0	-	1(0.2)	1(0.2)	1.00 <sup>a</sup>	1.00 <sup>a</sup>
Alopecia	-	2(0.2)	-	-	0	-	-	2(0.4)	-	0.54 <sup>a</sup>

a, Fisher's exact test. The rest of the statistical tests were calculated with the Pearson's  $\chi^2$  test.

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**Supplementary Table 3.** Logistic regression models to evaluate the risk factors for CIS score  $\geq 27$ .

Variables	Univariable ORs(95%CI)	P value	Multivariable ORs(95%CI)	P value
Age, year	1.08(1.05-1.12)	<0.001	1.08(1.05-1.11)	<0.001
Sex, female	1.29(0.84-1.99)	0.25	1.20(0.77-1.86)	0.43
Severity, vs. no	1.52(0.98-2.36)	0.06	1.11(0.70-1.75)	0.66
ICU admission, vs. no	1.86(0.71-4.89)	0.21		
Oxygen therapy, vs. no	2.60(1.29-5.26)	0.008	2.19(1.06-4.50)	0.03
Mechanical ventilation, vs. no	2.03(0.59-7.03)	0.26		
Cigarette smoking, vs. never				
Former	4.00(1.08-14.79)	0.04		
Active	0.86(0.34-2.22)	0.76		
Coexisting disorder, vs. no				
Hypertension	0.71(0.45-1.12)	0.14		
Diabetes	1.43(0.86-2.37)	0.17		
Cardiovascular diseases	0.57(0.28-1.16)	0.12		
Chronic liver diseases	1.35(0.52-3.49)	0.54		
Cerebrovascular diseases	2.63(1.28-5.38)	0.008		
Chronic kidney diseases	0.92(0.21-3.94)	0.91		
Tumor	1.68(0.58-4.89)	0.34		
COPD	3.29(1.07-10.15)	0.04		

Dependent variable: CIS score  $\geq 27$ .

Independent variables: Age, Sex, Severity, Oxygen therapy (excluding mechanical ventilation), Cigarette smoking, Cerebrovascular diseases, COPD.

Abbreviations: ICU, Intensive Care Unit; COPD, Chronic Obstructive Pulmonary Disease.

**Supplementary Table 4.** Logistic regression models to evaluate the risk factors for HADS score  $\geq 16$ .

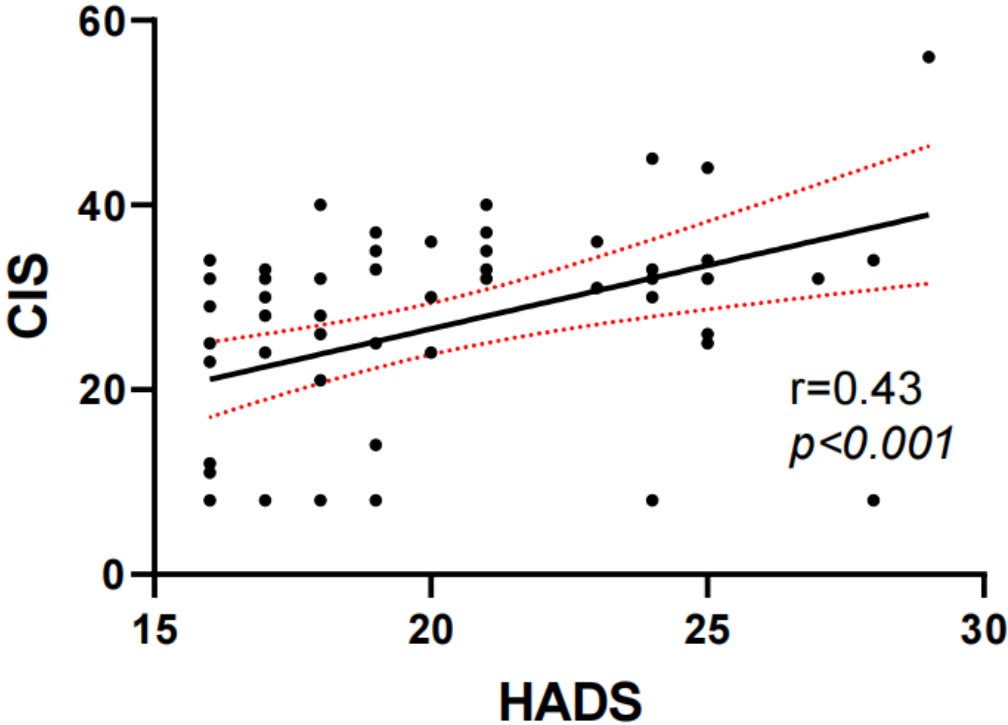
Variables	Univariable ORs(95%CI)	P value	Multivariable ORs(95%CI)	P value
Age, year	1.06(1.02-1.10)	0.002	1.04(1.00-1.08)	0.03
Sex, female	0.84(0.49-1.42)	0.52	0.64(0.37-1.12)	0.12
Severity, vs. no	2.32(1.37-3.96)	0.002	2.20(1.28-3.79)	0.004
ICU admission, vs. no	2.21(0.64-5.80)	0.15		
Oxygen therapy, vs. no	2.49(1.14-6.54)	0.04		
Mechanical ventilation, vs. no	3.13(0.72-9.59)	0.07		
Cigarette smoking, vs. never				
Former	3.31(0.50-12.69)	0.13		
Active	0.45(0.07-1.51)	0.28		
Coexisting disorder, vs. no				
Hypertension	0.88(0.51-1.49)	0.63		
Diabetes	1.08(0.54-2.01)	0.81		
Cardiovascular diseases	1.38(0.69-2.57)	0.34		
Chronic liver diseases	0.38(0.02-1.76)	0.34		
Cerebrovascular diseases	4.44(2.02-8.99)	<0.001	4.05(1.84-8.93)	0.001
Chronic kidney diseases	0.67(0.09-4.98)	0.69		
Tumor	1.18(0.19-4.02)	0.83		
COPD	1.01(0.06-5.01)	1.00		

Dependent variable: HADS score  $\geq 16$ .

Independent variables: Age, Sex, Severity, Oxygen therapy (excluding mechanical ventilation), Mechanical ventilation, Cerebrovascular diseases.

Abbreviations: ICU, Intensive Care Unit; COPD, Chronic Obstructive Pulmonary Disease

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Supplementary Figure 1. Linear regression of HADS  $\geq 16$ . Dashed lines represent 95% confidence interval.