

## SUPPLEMENTARY MATERIAL

### **Clinical factors affecting short- and long-term mortality in older patients with COVID-19: a retrospective cohort study**

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**Contributions:** AB, AMM, conceived the study design; FR, MaMe, BP, MG, MB, PMT, CB, FR collected data; AB, performed statistical analyses; FR, MaMe, BP, AB, drafted the first version of the manuscript; AB, AMM, MaMo, DDG, FD, critically revised the manuscript. All authors read and approved the final version to be published.

**Conflict of interest:** AB received honoraria from Effetti s.r.l. (Milan, Italy) to collaborate on the medical website [www.inflammology.org](http://www.inflammology.org), outside the present work. The other authors declare no potential conflict of interest.

**Ethical approval and consent to participate:** the study was conducted in accordance with the Declaration of Helsinki (revised version 2000) and approved by the local Institutional Review Board (Valutazione dell'efficacia di parametri clinici, laboratoristici e radiologici nella predizione dell'efficacia delle terapie in uso per il trattamento della sindrome da distress respiratorio acuta secondaria ad infezione da SARS-CoV-2 [REgistro COvid-19 asST settE LAghi, RECostELA; study number 150/2021).

**Availability of data and material:** data and materials are available by the authors.

**Informed consent:** patients signed a written informed consent before enrolment. For those who could not sign due to his/her medical condition, a verbal consent with a witness was collected.

**Conference presentation:** a part of the results herein provided has been discussed as an oral presentation during the 28<sup>th</sup> annual congress of Federazione delle Associazioni dei Dirigenti Ospedalieri Internisti (FADOI) held in Milan (Italy).

**Table S1. Baseline characteristics of the overall cohort.**

	Overall cohort (n=509)
Age, years	86 [82-89]
80-85 years, n (%)	254 (49.9)
86-90 years, n (%)	172 (33.8)
91-100 years, n (%)	83 (16.3)
Sex	
Male, n (%)	205 (40.3)
Female, n (%)	304 (59.7)
Comorbidities	
Hypertension, n (%)	396 (77.8)
Type 2 diabetes, n (%)	120 (23.6)
Coronary artery disease, n (%)	84 (16.5)
Atrial fibrillation, n (%)	137 (26.9)
Heart failure, n (%)	69 (13.6)
Valvular heart disease, n (%)	50 (9.8)
Previous stroke, n (%)	58 (11.4)
COPD, n (%)	76 (14.9)
Dementia, n (%)	152 (29.9)
Chronic kidney disease, n (%)	87 (17.1)
Chronic liver disease, n (%)	14 (2.8)
Active cancer, n (%)	41 (8.1)
Hypothyroidism, n (%)	60 (11.8)
Clinical frailty scale	6 [4-7]
CFS 1 to 3 (fit), n (%)	81 (15.9)
CFS 4 (vulnerable), n (%)	67 (13.2)
CFS 5 to 9 (frail), n (%)	358 (70.3)
Length of hospital stay, days	9 [5-14]

CFS, clinical frailty scale; COPD, chronic obstructive pulmonary disease.

**Table S2. Baseline characteristics of the overall cohort according to Clinical frailty scale.**

	Fit (CFS 1 to 3) n=81	Vulnerable (CFS 4) n=67	Frail (CFS 5 to 9) n=358	P
Age, years, [IQR]	86 [82-90]	85 [82-88]	86 [82-89]	0.472
80-85 years, n (%)	40 (49.4)	36 (53.7)	176 (49.3)	0.797
86-90 years, n (%)	28 (34.6)	24 (35.8)	118 (33.1)	0.892
91-100 years, n (%)	13 (16.0)	7 (10.4)	63 (17.6)	0.343
Sex				
Male, n (%)	26 (32.1)	29 (43.3)	149 (41.7)	0.245
Female, n (%)	55 (67.9)	38 (56.7)	208 (58.3)	
Comorbidities				
Hypertension, n (%)	68 (84.0)	52 (77.6)	274 (76.8)	0.367
Type 2 diabetes, n (%)	20 (24.7)	12 (17.9)	87 (24.4)	0.503
Coronary artery disease, n (%)	15 (18.5)	9 (13.4)	59 (16.5)	0.705
Atrial fibrillation, n (%)	17 (21.0)	16 (23.9)	103 (28.9)	0.295
Heart failure, n (%)	10 (12.3)	8 (11.9)	50 (14.0)	0.856
Valvular heart disease, n (%)	8 (9.9)	4 (6.0)	37 (10.4)	0.536
Previous stroke, n (%)	7 (8.6)	6 (9.0)	45 (12.6)	0.471
COPD, n (%)	10 (12.3)	9 (13.4)	57 (16.0)	0.659
Dementia, n (%)	21 (25.9)	27 (40.3)	103 (28.9)	0.119
Chronic kidney disease, n (%)	15 (18.5)	11 (16.4)	61 (17.1)	0.937
Chronic liver disease, n (%)	4 (4.9)	—	10 (2.8)	0.190
Active cancer, n (%)	9 (11.1)	6 (9.0)	26 (7.3)	0.504
Hypothyroidism, n (%)	11 (13.6)	12 (17.9)	36 (10.1)	0.158
Length of hospital stay, days [IQR]	9 [5-14]	9 [5-13]	9 [5-15]	0.972

CFS, clinical frailty scale; IQR, interquartile range; COPD, chronic obstructive pulmonary disease.

**Table S3. Respiratory parameters during hospital stay in the whole cohort.**

	Overall cohort (n=509)
SpO <sub>2</sub> at admission, %	95 [92-97]
SpO <sub>2</sub> >95%, n (%)	222 (46.3)
SpO <sub>2</sub> 91 to 95%, n (%)	189 (37.1)
SpO <sub>2</sub> 85 to 90%, n (%)	51 (10.0)
SpO <sub>2</sub> <85%, n (%)	17 (3.5)
Oxygen support during hospital stay	
Nasal cannulas, n (%)	140 (27.7)
Ventimask, n (%)	130 (25.7)
Non-rebreather mask, n (%)	73 (14.5)
CPAP, n (%)	22 (4.4)
Maximum oxygen support during hospital stay	
Nasal cannulas, n (%)	128 (25.2)
Ventimask, n (%)	101 (19.9)
Non-rebreather mask, n (%)	144 (28.5)
CPAP, n (%)	57 (11.2)

CPAP, continuous positive air pressure; SpO<sub>2</sub>, peripheral oxygen saturation.

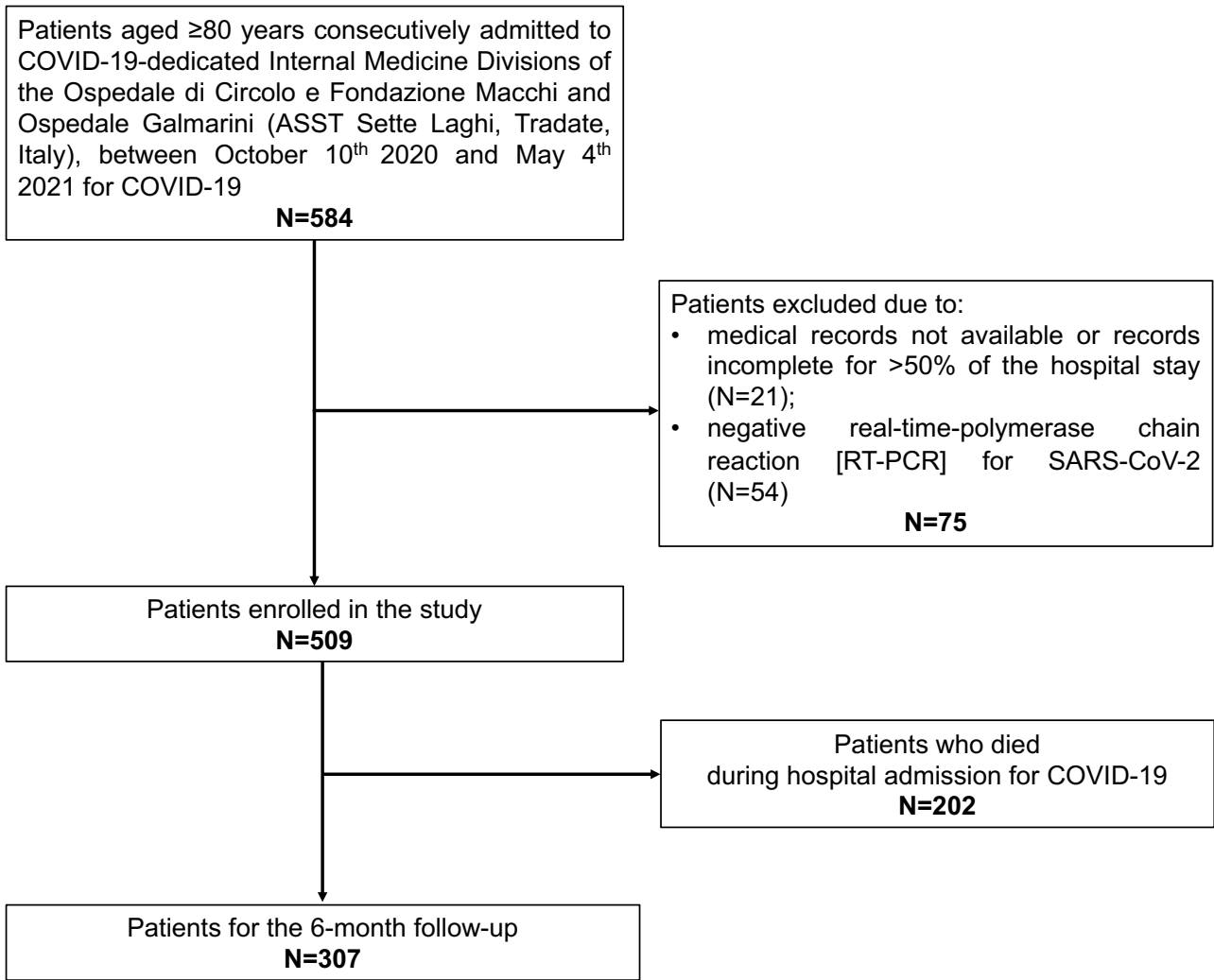
**Table S4. Pharmacological management of respiratory failure in the whole cohort.**

	Overall cohort (n=509)
Patients on glucocorticoid therapy, n (%)	366 (71.9)
Dexamethasone 20 mg daily, n (%)	106 (20.9)
Dexamethasone 16 mg daily, n (%)	22 (4.3)
Dexamethasone 10 mg daily, n (%)	7 (1.4)
Dexamethasone 8 mg daily, n (%)	15 (3.0)
Dexamethasone 6 mg daily, n (%)	205 (40.4)
Dexamethasone 4 mg daily, n (%)	13 (2.6)
Prednisone 5 mg daily, n (%)	1 (0.2)

**Table S5. Baseline characteristics of the overall cohort according to survival status at 6-month follow-up.**

	Survived n=215	Deceased n=294	P
Age, years	85 [82-88]	87 [83-90]	<0.001
80-85 years, n (%)	129 (60.0)	125 (42.5)	<0.001
86-90 years, n (%)	71 (33.0)	101 (34.4)	0.777
91-100 years, n (%)	15 (7.0)	68 (23.1)	<0.001
Sex			
Male, n (%)	90 (41.9)	125 (58.1)	0.583
Female, n (%)	115 (39.1)	179 (60.9)	
Comorbidities			
Hypertension, n (%)	169 (78.6)	227 (77.2)	0.747
Type 2 diabetes, n (%)	47 (21.9)	73 (24.8)	0.461
Coronary artery disease, n (%)	34 (15.8)	50 (17.0)	0.809
Atrial fibrillation, n (%)	53 (24.7)	84 (28.6)	0.363
Heart failure, n (%)	25 (11.6)	44 (15.0)	0.297
Valvular heart disease, n (%)	20 (9.3)	30 (10.2)	0.765
Previous stroke, n (%)	20 (9.3)	38 (12.9)	0.258
COPD, n (%)	30 (14.0)	46 (15.6)	0.617
Dementia, n (%)	41 (19.1)	111 (37.8)	<0.001
Chronic kidney disease, n (%)	29 (13.5)	58 (19.7)	0.074
Chronic liver disease, n (%)	2 (0.9)	12 (4.1)	0.051
Active cancer, n (%)	18 (8.4)	23 (7.8)	0.870
Hypothyroidism, n (%)	28 (13.0)	32 (10.9)	0.488
Clinical frailty scale			
CFS 1 to 3 (fit), n (%)	37 (17.2)	44 (15.0)	0.540
CFS 4 (vulnerable), n (%)	35 (16.3)	32 (10.9)	0.085
CFS 5 to 9 (frail), n (%)	142 (66.0)	216 (73.5)	0.077

CFS, clinical frailty scale; COPD, chronic obstructive pulmonary disease.



**Figure S1. Study flow chart.**



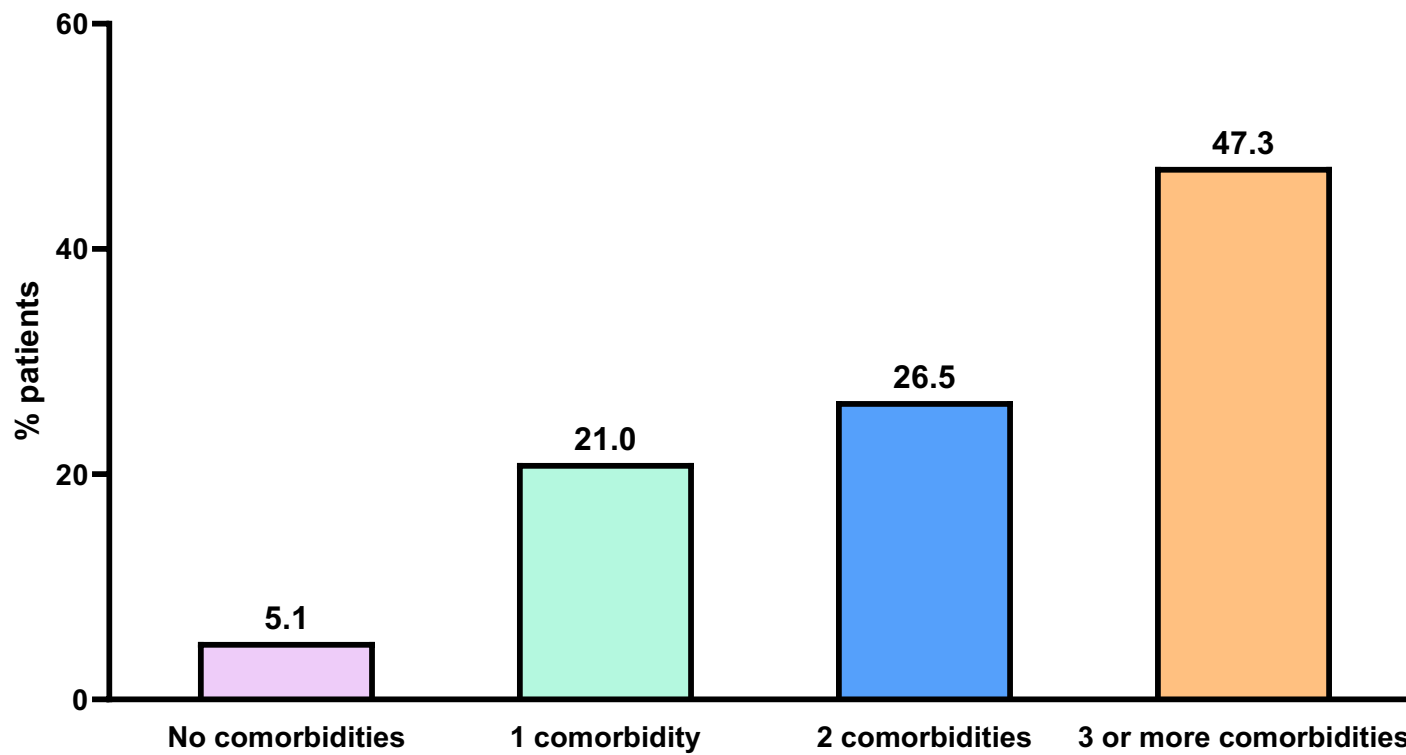


Figure S2. Number of comorbidities in the whole cohort.

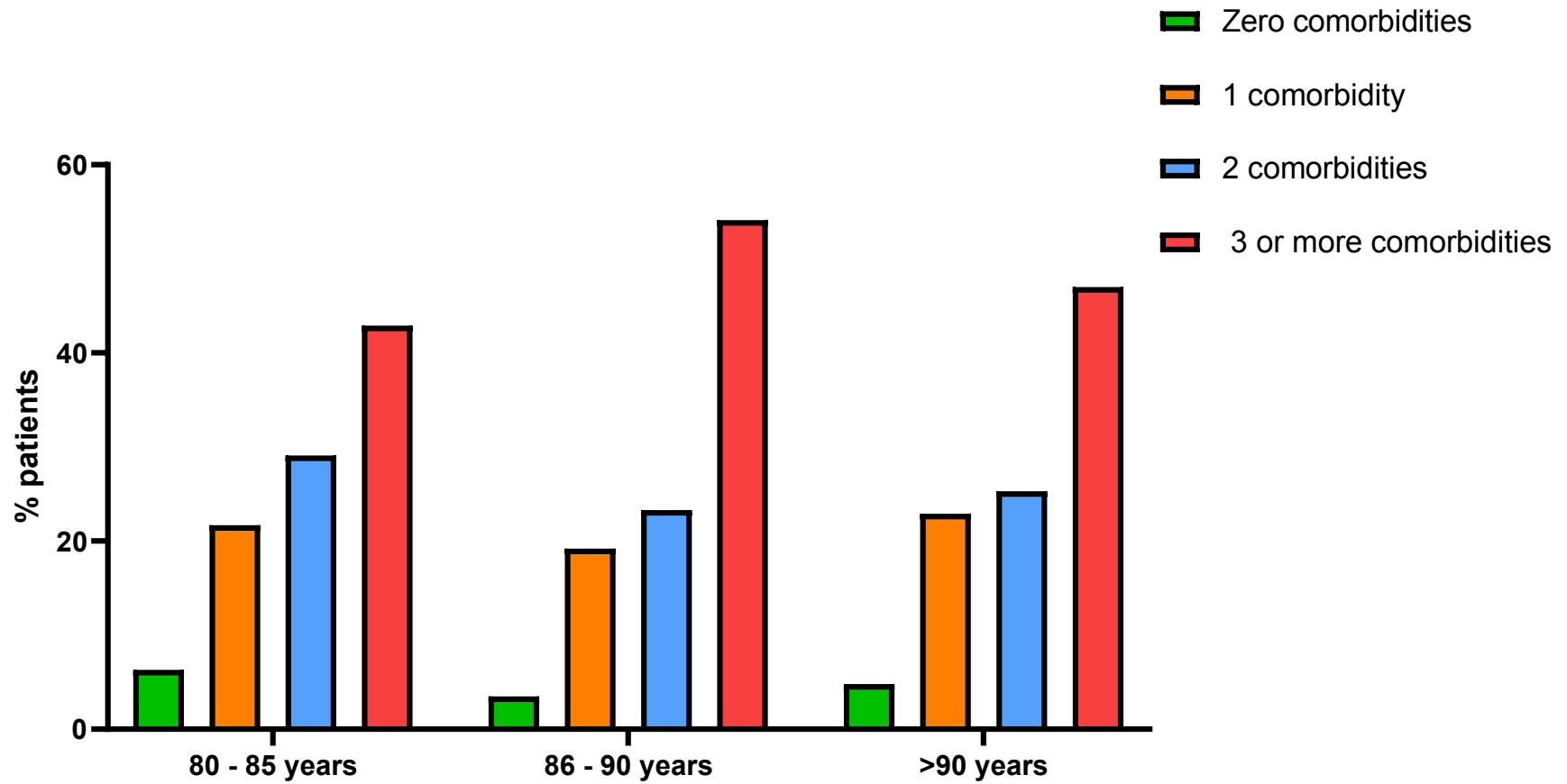


Figure S3. Distribution of comorbidities across age groups. No differences in terms of proportions of comorbidities was observed in the three age groups. P not significant for Chi-square test.

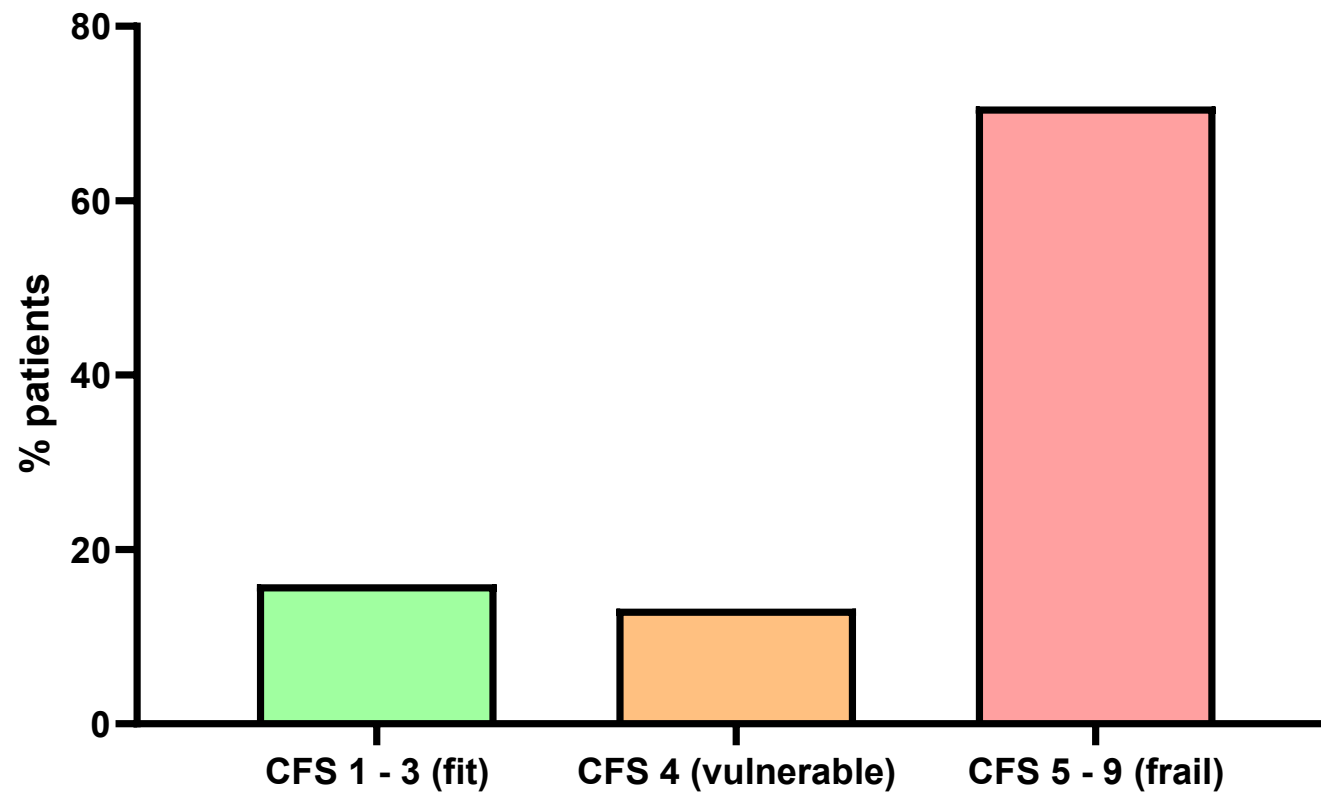


Figure S4. Frailty distribution in the overall cohort.

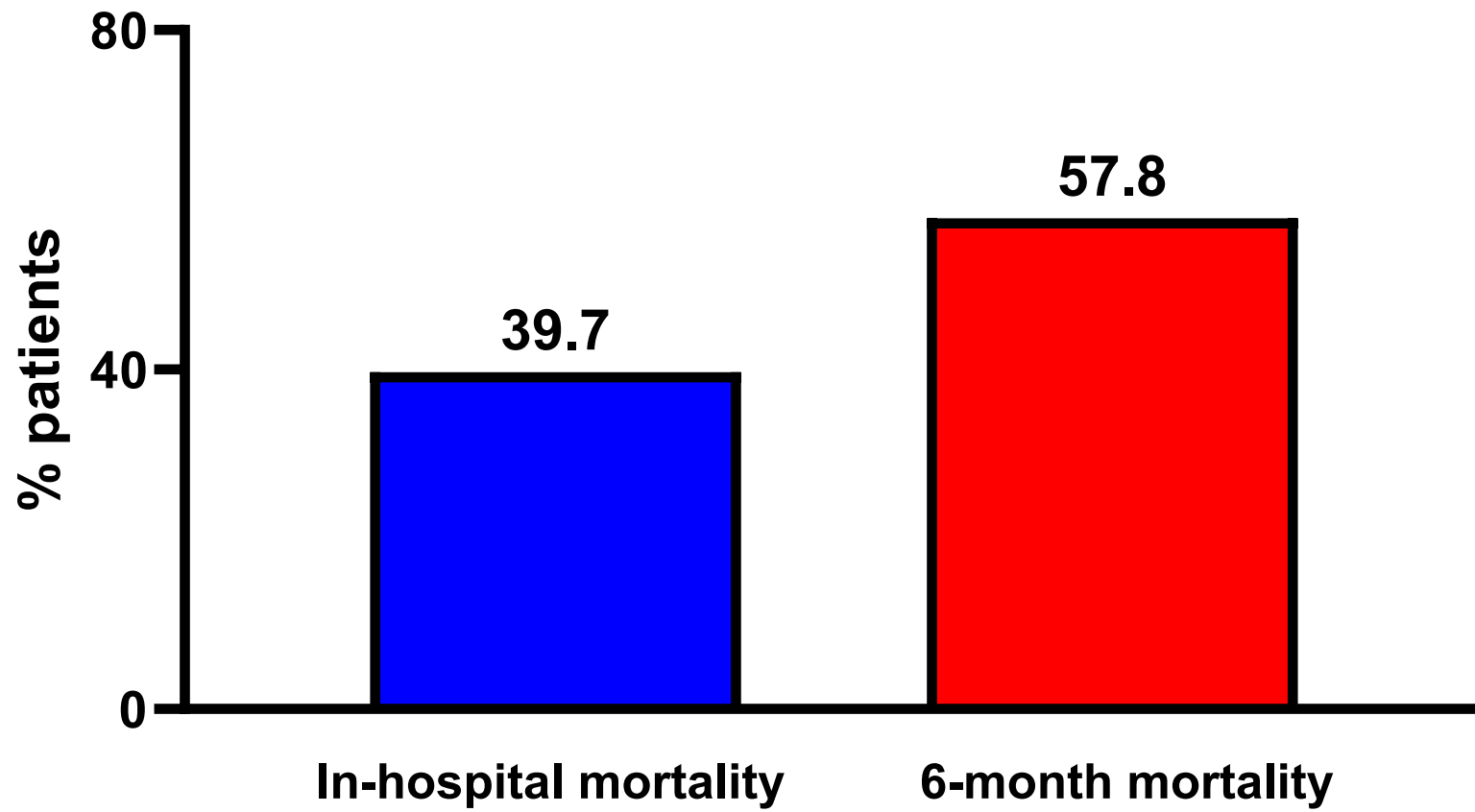


Figure S5. Overall mortality during hospital admission and after 6 months.