

Association of frailty, organ support, and long-term survival in critically ill patients with COVID-19

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This Supplemental Digital Content contains:

Members of the CO-FRAIL Study Group, EPICCoV Study Group and COVID HCFMUSP Study Group

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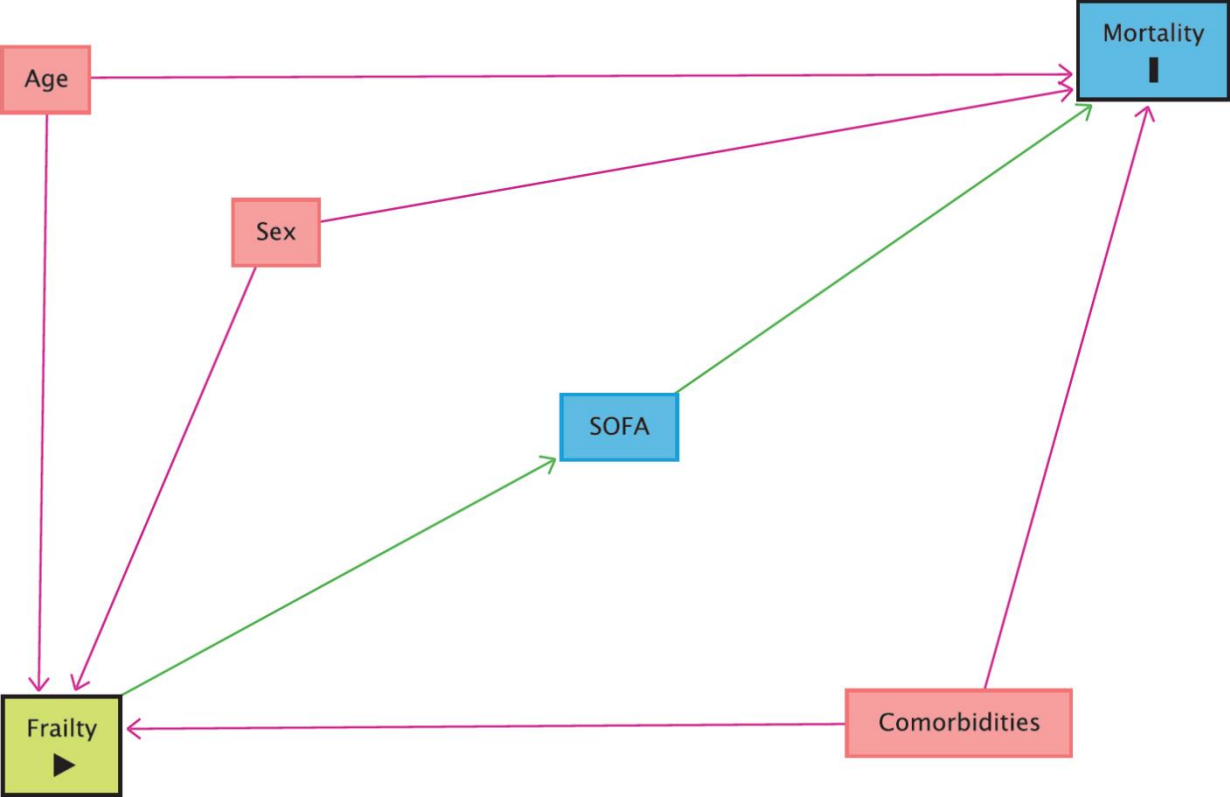
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Figure S1. Causal diagram represented by a directed acyclic graph (DAG) showing the conceptual model for the association between frailty, selected covariates and survival.



Legend: This conceptual model using Directed acyclic graph (DAG) shows clinically relevant variables associated with survival. Arrows indicate a suspected direct causal effect of one variable on another variable. Frailty is the main predictor, shown in green; variables associated with the outcome, but not associated with the main predictor, are shown in blue; variables associated with both the outcome and the main predictor, shown in red, are potential confounders (arrows indicated a suspected direct causal effect of that variable on both the main predictor and the outcome). A multivariable analysis of the effect of frailty on survival should be adjusted for all potential confounders.

Table S1. Variables and scoring of the Frailty Index.

Variables (40 items)	Cut-off values
Chronic obstructive pulmonary disease or asthma	Yes=1 No=0
Cerebrovascular disease	Yes=1 No=0
Congestive heart failure	Yes=1 No=0
Diabetes	Yes=1 No=0
Dementia	Yes=1 No=0
Liver disease	Yes=1 No=0
Myocardial infarction	Yes=1 No=0
Atrial fibrillation	Yes=1 No=0
Chronic kidney disease (moderate to severe)	Yes=1 No=0
Tumor (cancer)	Yes=1 No=0
Rheumatoid arthritis	Yes=1 No=0
Peptic ulcer disease	Yes=1 No=0
Peripheral vascular disease	Yes=1 No=0
Hypertension	Yes=1 No=0
Depression	Yes=1 No=0
Falls occurrence in the previous 12 months	Yes=1 No=0
Polypharmacy (≥ 5 medications)	Yes=1 No=0
Visual impairment	Yes=1 No=0
Hearing impairment	Yes=1 No=0
Substantial memory complaints	Yes=1 No=0
Hospital admission in the last six months	Yes=1 No=0
Body mass index (kilograms/meters ²)	≥ 30 or $< 18.5=1$ $25-30=0.5$ $18.5-25=0$
Weight loss ≥ 4.5 kilograms in the last year	Yes=1 No=0
Fatigue most of the time	Yes=1 No=0
Eating	Unable=1 Need some help=0.5 Independent=0
Dressing	Unable=1 Need some help=0.5 Independent=0
Transferring	Unable=1 Need some help=0.5 Independent=0
Grooming	Unable=1 Need some help=0.5 Independent=0
Bathing	Unable=1 Need some help=0.5 Independent=0
Toileting	Unable=1 Need some help=0.5 Independent=0
Urinary or fecal continence	Unable=1 Need some help=0.5 Independent=0
Able to cut toenails	Unable=1 Need some help=0.5 Independent=0
Walking across the room	Unable=1 Need some help=0.5 Independent=0
Up and down stairs	Unable=1 Need some help=0.5 Independent=0
Visit places near home	Unable=1 Need some help=0.5 Independent=0
Taking medications	Unable=1 Need some help=0.5 Independent=0
Housekeeping	Unable=1 Need some help=0.5 Independent=0
Cooking	Unable=1 Need some help=0.5 Independent=0
Shopping	Unable=1 Need some help=0.5 Independent=0
Using transportation	Unable=1 Need some help=0.5 Independent=0

Table S2. Performance of different Clinical Frailty Scale (CFS) scores to identify frailty according to the Frailty Index (N = 1,027*).

Cut-off	Sensitivity	Specificity	+LR	-LR
≥1	1.00	0.00	1.00	-
≥2	1.00	0.07	1.07	0.00
≥3	0.98	0.27	1.35	0.07
≥4	0.91	0.76	3.71	0.12
≥5	0.73	0.93	9.80	0.29
≥6	0.47	0.99	38.0	0.53
≥7	0.21	1.00	-	0.79
≥8	0.03	1.00	-	0.97

LR = likelihood ratio

Frailty Index >0.25 defined the presence of frailty; Youden index cut-off ≥ 4.

*One missing value for the Frailty Index.

Frailty status was assessed in the period 2-4 weeks before hospitalization.