Category :**ICU organization**

A97 - *Clinical frailty scale (cfs) indicated frailty is associated with increased in-hospital and 30-day mortality in covid-19 patients: a systematic review and meta-analysis*

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Introduction:

The concept of frailty provides an age-independent, easy-to-use tool for risk stratification. We aimed to summarize the evidence regarding the use of frailty tools in COVID-19, assessing the risk of frail patients for in-hospital and 30-day mortality, intensive care unit (ICU) admission, and length of hospitalization (LOH).

Methods:

The protocol was prospectively registered via PROSPERO (CRD42021241544). We conducted a systematic search up to 03.02.2021 with terms related to COVID-19 and frail* in MEDLINE (via PubMed), EMBASE, Scopus, CENTRAL, and Web of Science. Studies reporting on frailty in COVID-19 patients were eligible. We compared in-hospital and 30-day mortality, LOH and ICU admission in frail and non-frail COVID-19 patients. Search, selection, data extraction and risk of bias (RoB) assessmentwere conducted in duplicate by two independent authors. The QUIPS tool was used for the RoB assessment. Odds ratios (OR) and weighted mean differences (WMD) were calculated with 95% confidence intervals (CI) using a random effect model. Heterogeneity was assessed using the $I^2$and χ^2 tests.

Results:

From 1693 records, 27 were included in the qualitative and 21 in the quantitative synthesis. Clinical Frailty Scale (CFS) was used in 24 studies. We found that frail patients (CFS 5–9) compared to non-frail patients (CFS 1–4) have a higher risk for both in-hospital (OR: 2.77; CI: 1.86–4.15) and 30-day mortality (OR: 1.47; CI:1.05–2.06). Frail patients were less likely to be admitted to ICU: CFS 4–9 (OR: 0.13, CI 0.09–0.17); CFS 5–9 (OR 0.05, CI: 0.01–0.16); (Table 1). Quantitative synthesis for LOH was not feasible. Most results showed considerable heterogeneity. Most studies carried a high risk of bias.

Conclusion:

As determined by CFS, frailty is strongly associated with in-hospital and 30-day mortality; hence, investigating its use in deciding on ICU admission further in COVID-19 is warranted.

Table:

Outcomes	CFS categorization	No. of patients (Studies)	Relative effect: OR (95% CI)	Risk of Bias (QUIPS)
In-hospital mortality	CFS 1–4 vs 5–9	4023 (11)	2.77 (1.86, 4.15)	10 High risk, 3 Low risk
	CFS 1–5 vs 6–9	4537 (8)	3.14 (2.09, 3.53)	
30-day mortality	CFS 1–4 vs 5–9	1445 (4)	1.47 (1.05, 2.06)	4 High risk, 1 Low risk
	CFS 1–5 vs 6–9	1058 (3)	1.62 (0.96, 2.74)	

ICU admission	CFS 1–3 vs 4–9	2636 (4)	0.13 (0.09, 0,17)	6 High risk, 0 Low risk
	CFS 1–4 vs 5–9	1774 (4)	0.05 (0.01, 0.16)	

Summary of findings