

Frailty assessment in the COVID-19 pandemic

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Dear Editor,

We read with great interest the brief report by Labenz *et al*¹ entitled 'Clinical Frailty Scale for risk stratification in patients with SARS-CoV-2 infection', which has recently been published in the *Journal of Investigative Medicine*. The authors explored the predictive factors for adverse outcomes in patients with COVID-19, specifically looking at the ability of the Clinical Frailty Scale (CFS) to predict the need for mechanical ventilation and duration of hospital stays in European patients with COVID-19. By defining frailty as CFS>4, they found that patients with higher CFS scores (HR 1.659, 95% CI 1.090 to 2.525, $p=0.018$) had a higher risk of requiring mechanical ventilation after adjustment for age, Charlson Comorbidity Index (CCI) and quick sepsis-related organ failure score. In addition, they also found that lower CFS scores (HR 0.554, 95% CI 0.312 to 0.983, $p=0.043$) were associated with earlier discharge from hospital.

First, we would like to thank the authors for highlighting the importance of frailty assessment during the COVID-19 pandemic for optimal use of limited healthcare resources. Frailty is common in patients admitted to intensive care and is associated with worsened outcomes.² The COVID-19 pandemic has affected more elderly patients with comorbidities, thereby increasing their risk of mortality.³ While we agree with the authors that the CFS is a good assessment tool for risk stratification in patients with COVID-19 and has been shown to better predict disease outcomes than age and comorbidity,⁴ we would like to highlight the following points on their brief report:

1. Only European patients with COVID-19 were included in their study. Although they also mention their results might only be generalizable to the Western world rather than Chinese patients, they should also have mentioned patients of the black, Asian and minority ethnic group, who also form an integral part of the Western world and who have been shown to be more severely affected by COVID-19.⁵
2. The authors used the CCI, which has been shown to predict mortality with an exponential increase in OR by each point of score.⁶ However, hypertension, respiratory system disease and cardiovascular disease specifically have been shown to present a greater risk for severe patients with COVID-19.⁷ Assessment of arterial hypertension

is not part of the CCI, which could have been adjusted for. Other studies have also suggested the role of diabetes, chronic obstructive pulmonary disease (COPD) and cerebrovascular disease as independent risk factors associated with COVID-19.⁸ Adjustment for patients with other chronic lung conditions, including COPD, could have also been evaluated as these patients are at a higher risk of requiring mechanical ventilation.⁹

3. It would also be interesting to know the significance of the difference between different laboratory values at admission as elevated procalcitonin (HR 1.72, 95% CI 1.02 to 2.90) and D-dimer (HR 2.01, 95% CI 1.12 to 3.58) at baseline were associated with risk for disease progression,¹⁰ while intensive care unit admission was predicted by raised leucocyte count ($p<0.0001$), raised alanine aminotransferase ($p=0.024$), raised aspartate transaminase ($p=0.0040$), elevated lactate dehydrogenase ($p<0.0001$) and increased procalcitonin ($p<0.0001$).¹¹

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