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Prognostication in older ICU patients: mission impossible?

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The coronavirus disease 2019 (COVID-19) pandemic created a 'surge' in demand for robust criteria to be used in triage for hospital and ICU admission. We witnessed a large number of papers published and guidelines on the internet,^{1–5} many with no firm connection to health authorities and usually reflecting only the view of an organisation or individual authors and scientists.

The UK is one of the few countries with a national guideline for ICU pandemic triage, issued by the National Institute for Health and Care Excellence (NICE).⁶ Probably for the first time, frailty assessment was used at a national level to be the most important criterion for ICU triage. For those ≥ 65 yr old, the Clinical Frailty Scale (CFS) was advocated as a tool in a holistic assessment of patients, but not for those < 65 yr. It is important to emphasise that a CFS ≥ 5 , which was chosen as a threshold, was not absolute, and critical care could still be provided if it was considered appropriate. These triage guidelines were never intended to be an individual prognostic tool, but rather to identify groups of patients most likely to profit from intensive care in a situation where demand was higher than available resources. The alternative could be a chaotic process, with patients prioritised using a 'first come first served' approach,⁷ and triage criteria might be implemented locally as in fact happened in many hospitals during the initial COVID-19 pandemic surge in Europe.⁸

It is important to use robust criteria for pandemic triage, and not surprisingly frailty was chosen above other criteria such as age alone, comorbidity, or even severity of disease. In

the past 5 yr, a large body of evidence has been published on using frailty in prognostication for older ICU patients.⁹ In Europe, two large prospective studies in very old ICU patients recorded frailty before admission using the CFS.^{10,11} Both studies confirmed that frailty was one of the most important explanatory variables for outcome, including survival, in particular beyond ICU discharge. The study by Guidet and colleagues¹¹ confirmed the principal role of the CFS as a comprehensive descriptor of a patient's resilience as neither comorbidity, cognition, nor activities of daily living offered additional discriminating power to the analysis. In a pandemic this may be a desired feature of a tool used for triage, especially if it simplifies the process. The information needed to perform the CFS can also be retrieved reliably in retrospect¹² or be retrieved from medical records.

In this issue of *British Journal of Anaesthesia*, a study by Darvall and colleagues¹³ from Australia and New Zealand challenges the part of the NICE triage guidelines that advises using CFS ≥ 5 as indicative of sufficient frailty, and hence patients are given less priority for intensive care admission. The authors use a comparative cohort of adult ICU patients ≥ 65 yr admitted with pneumonia. In their database, CFS was scored at admission (but was not mandatory), and they found that only the two highest scores, CFS 7 and 8, were significantly associated with mortality. They concluded that a NICE threshold of CFS ≥ 5 is too low and should not be used.

How solid is this conclusion? There are several important differences between their study group and COVID-19 patients treated for acute respiratory failure. First, it is far from evident that non-COVID-19 pneumonia is similar to the pulmonary failure seen during the present pandemic.^{14,15} Both their ICU

and 30-day mortality in frail patients (12% and 21%, respectively) are much lower than the mortality level reported in patients with COVID-19 respiratory failure.^{16–18} Also, the reported mortality in ventilator-treated patients is very low, indicating differences in population and probably also in process of care. The COVID-19 lung is probably very different from that in patients with pneumonia,¹⁹ where outside the seasonal flu most have a bacterial origin. As the present study cannot differentiate bacterial and viral pneumonia, this adds to the differences between this cohort and a cohort of COVID-19 patients. Second, the number of patients given noninvasive ventilation (NIV) in their cohort was very high, and the ratio of patients given mechanical ventilation (MV) to NIV was 1.1, whereas in an UK cohort of COVID-19 ICU patients this ratio was 2.8,²⁰ revealing large differences in respiratory management. Third, there also seems to be a large difference between their cohort and COVID-19 patients in the distribution of frailty. In the study by Darvall and colleagues,¹³ a cohort 1852 patients (33%) had CFS ≥ 5 , whereas in a recent study in hospitalised patients from the UK and Italy 773 (49.4%) had CFS ≥ 5 , indicating a very high CFS even in hospitalised patients.²¹ Taken together, the information from their cohort does not seem to justify their conclusion not to use a particular CFS threshold for COVID-19-related guidelines.

As physicians, we would like to see triage criteria based on firm evidence regarding outcomes. However, this has proven difficult. The main challenge is the fact that in clinical work we deal with individuals and not groups. In individual patients, outcome is usually binary: survival or death. This is in contrast with group statistics where we can use probabilities of a specific outcome found in a fraction of that group. Thus, in the real world, ICU physicians do not use prognostic scores in isolation for their individual prognostications, but add a lot of other information about the patient before a decision is made. In particular, dynamic information incorporating longitudinal data rather than a single static assessment should be used as suggested in the study by Darvall and colleagues.

We acknowledge that this 'normal' approach can be a problem in the late phase of a pandemic surge, where ICU capacity is far lower than demand. Triage under such circumstances may have to use group-level information, and if possible should combine two or more robust indicators available at admission. As such, the CFS, at least in the older cohort, seems to be a good choice, particularly when used with other information. Whether a CSF of 5 or 6 should be used will depend on available information, ideally derived from patients in the current pandemic and the urge for triage. This is why it is of vital importance to start prospective studies on patient outcomes at the earliest opportunity when a pandemic develops. The WHO initiative before this pandemic with a request to perform clinical studies on pandemic management²² is a good example on how we should act in the future.

Authors' contributions

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Contribution to further discussion: BG, MB
Refinement of the final manuscript: BG, MB

Declarations of interest

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Digital health for patients with chronic pain during the COVID-19 pandemic

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Coronavirus disease 2019 (COVID-19) has rapidly infected more than 10 million individuals and caused more than 500 000 deaths in the first half of 2020. It has resulted in front-loaded healthcare systems and extensive disruptions to daily life in efforts to ‘flatten the curve’. The impact on health systems has been amplified by fear-mongering and misinformation.¹ The WHO has dubbed this an ‘infodemic’ in a recent situation report, calling for urgent solutions to amplify official guidance.¹ Rosenbaum² has highlighted additional concerning consequences for care of non-COVID-19 ailments, compounding the effects of extended lockdowns and the infodemic. The marked declines in presentations of acute coronary and cerebrovascular syndromes are contributed to by impaired healthcare accessibility from over-stretched emergency services and fear of exposure to COVID-19 at medical facilities.² These trends similarly impact patients with chronic diseases, threatening to impair long-term control, and perpetuate late detection of complications or deterioration in clinical condition.

The impact of COVID-19 on chronic pain patients

Chronic pain is an increasingly prevalent medical problem affecting more than a third of some populations.³ It is the leading cause of disability globally, increases economic vulnerability, has a detrimental impact on quality of life, and is commonly associated with both anxiety and mood disorders.^{4,5} Chronic pain has many established risk factors including advanced age, multiple co-morbid conditions, smoking, and obesity,⁴ which overlap with factors associated with increased severity of COVID-19 infection.⁶

Furthermore, public health responses involving social distancing have led to widespread isolation and loneliness, with detrimental effects on mental function.⁶ This will likely lead to a surge in mental health disorders such as anxiety and depression that are commonly associated with chronic pain.⁷ Collectively, these factors make chronic pain patients particularly vulnerable in the context of the COVID-19 pandemic.