



EDITORIAL

On frailty, quality of life and post-ICU syndrome

De fragilidad, calidad de vida y síndrome post-UCI



In the current number of *Medicina Intensiva*, Peñuelas et al.¹ analyze the frailty of patients admitted to the Intensive Care Unit (ICU) due to respiratory failure secondary to COVID-19. This prospective multicenter (8 centers) study carried out in Mexico measured patient frailty upon admission and 6 months after discharge from the ICU. A total of 164 patients underwent complete follow-up. Only 22% of the patients who were initially robust remained so 6 months after discharge from the ICU, reflecting a worsening of prior physical condition in most of the subjects. Only the need for mechanical ventilation (MV) was related to the worsening of the basal condition in these patients. The study cohort consisted of relatively young individuals, with scant comorbidity and mostly with non-severe acute respiratory distress syndrome (ARDS) and practically no frailty upon admission, so practically no other risk factors for long-term deterioration were identified.

The study presents a novel approach by assessing frailty not so much as a risk factor but as an “outcome” variable following admission to the ICU.

Frailty is defined as a condition characterized by a loss of functional reserves, failure of the homeostatic mechanisms, and vulnerability toward a range of adverse outcomes such as falls, disability, an increased need for medical care, and premature death.² To date, frailty has been studied and defined as a risk factor for poor outcomes in the abovementioned terms, and many studies have related frailty before ICU admission to the life and functional prognosis of the patient at discharge – also in patients with acute respiratory failure due to COVID-19.^{3,4}

The patients included in the mentioned study were mostly not frail at the time of admission, and their functional and cognitive status worsened due to the severity of their pneumonia and the need for admission to the ICU and mechanical ventilation. The study assessed functional wors-

ening as “worsened frailty” (which in most of the included patients would correspond to “acquired frailty”), based on the FRAIL fragility scale.

This approach raises two very interesting issues for debate:

The first is how to measure frailty. The mentioned authors used the FRAIL scale, which evaluates 5 dimensions: fatigue, resistance, mobility, the presence of certain disease conditions, and weight loss in the last year. The existence of frailty is defined by a score of three or more. The tool has been validated in its area of influence, and is based on the personal assessment of the individual. Some studies in critically ill patients have used the CFS (Clinical Frailty Scale), which makes use of a pictographic scale of 9 “states” that range from a robust individual to a severely frail person. This score is easier to record, and in most cases, frailty is defined by a score of 5 or more. The Frailty Index in turn has been little used in Intensive Care Medicine. It explores 43 items related to the physical, emotional and cognitive spheres, and proves more laborious to apply than the other scales.^{4,5} The most appropriate method (considering robustness, simplicity and the adoption of a multidimensional approach to the concept) for identifying patient frailty in deciding admission to the ICU and allowing comparisons to be made between populations from different studies remains to be established.

The second and unexpected issue for debate of the mentioned study refers to when and how measurement should be made of the impact upon patient quality of life and health status after an episode of acute serious illness. We know that in many cases functional loss is accompanied by cognitive and emotional disturbances within the context of the so-called post-ICU syndrome (PICUS). On first addressing “when”, the time elapsed from hospital discharge to 30 days after discharge is considered to represent a short term, while a time from three months and beyond is considered to represent a long term – though some studies describe follow-up periods of up to 5 years.⁶ In the study published by Peñuelas et al., follow-up was made 6 months after hospital discharge, and this same period has been used in

DOI of original article: <https://doi.org/10.1016/j.medin.2024.04.001>

<https://doi.org/10.1016/j.medic.2024.04.015>

2173-5727/© 2024 Elsevier España, S.L.U. and SEMICYUC. All rights reserved.

most post-COVID studies.⁷ Although 6 months is considered to represent long-term follow-up, and few studies exceed this period, it is not clear whether this time is sufficient or whether as pointed out by some authors,⁸ the patient's health condition may still improve if measures aimed at reverting worsening are further maintained after identifying the patients at risk.

With regard to "how", at present and following several studies that describe not only functional but also cognitive and mental health problems in an important proportion of critically ill patients following ICU stay (in what is known as PICUS), the scales and tools that intend to measure patient quality of life over the short and long term after ICU admission must not focus only on the assessment of physical reserve but should also consider the cognitive and emotional dimensions.⁹ The simple frailty scales that group patients mainly according to their physical functional status and the EuroQol-5D-5L scale, classically used to measure quality of life after ICU stay,¹⁰ with the addition of the dimension anxiety-depression, are now considered to be entirely insufficient for assessing the sequelae and quality of life after admission to the ICU.

Considering the lack of a single tool for defining and quantifying the severity of PICUS, the experts recommend the combined use of several scales, including the EuroQol-5D-5L and scales for the assessment of posttraumatic stress, anxiety and cognitive function.⁹ The FRAIL or CFS scales might also be able to measure the physical component over the long term in PICUS, and the Frailty Index in turn might be able to also inform us of the cognitive and emotional components of the syndrome – though to date its use in Intensive Care Medicine has been limited to its prognostic value referred to patient admission to the ICU.

References

1. Peñuelas O, Lomeli JM, del Campo-Albendea L, Toledo SI, Arellano A, Chavarria U, et al. Fragilidad en sobrevivientes de COVID-19 graves tras el alta de UCI. Estudio prospectivo y multicéntrico en México. *Med Intensiva*. 2024;48:377–85.
2. Junius-Walker U, Onder G, Soleymani D, Wiese B, Albaina O, Bernabei R, et al. The essence of frailty: a systematic review and qualitative synthesis on frailty concepts and definitions. *Eur J Intern Med*. 2018;56:3–10, <http://dx.doi.org/10.1016/j.ejim.2018.04.023>.
3. Jung C, Flaatten H, Fjølner J, Raphael B, Bernhard W, Artigas A, et al. The impact of frailty on survival in elderly intensive care patients with COVID-19: the COVIP study. *Crit Care*. 2021;25(1), <http://dx.doi.org/10.1186/s13054-021-03551-3>.
4. Bellelli G, Rebora P, Valsecchi MG, Bonfanti P, Citerio G, Galimberti S, et al. Frailty index predicts poor outcome in COVID-19 patients. *Intensive Care Med*. 2020;46:1634–6, <http://dx.doi.org/10.1007/s00134-020-06087-2>.
5. Searle SD, Mitnitski A, Gahbauer EA, Gill TM, Rockwood K. A standard procedure for creating a frailty index. *BMC Geriatr*. 2008;8, <http://dx.doi.org/10.1186/1471-2318-8-24>.
6. Flaatten H, Jung C. Long-term outcomes after critical care: another brick in the wall. *Chest*. 2021;160:1587–8, <http://dx.doi.org/10.1016/j.chest.2021.06.012>.
7. Maley JH, Sandsmark DK, Trainor A, Bass G, Dabrowski C, Magdamo B, et al. Six-month impairment in cognition, mental health, and physical function following COVID-19-associated respiratory failure. *Crit Care Explor*. 2022;4(4), <http://dx.doi.org/10.1097/CCE.0000000000000673>.
8. Needham DM, Davidson J, Cohen H, Hopkins R, Weinert C, Wunsch H, et al. Improving long-term outcomes after discharge from intensive care unit: report from a stakeholders' conference. *Crit Care Med*. 2012;40:502–9, <http://dx.doi.org/10.1097/CCM.0b013e318232da75>.
9. Mikkelsen ME, Still M, Anderson BJ, Bienvenu O, Brodsky M, Brummel N, et al. Society of Critical Care Medicine's International Consensus Conference on Prediction and Identification of Long-Term Impairments After Critical Illness. *Crit Care Med*. 2020;48:1670–9, <http://dx.doi.org/10.1097/CCM.0000000000004586>.
10. Granja C, Teixeira-Pinto A, Costa-Pereira A. Quality of life after intensive care - evaluation with EQ-5D questionnaire. *Intensive Care Med*. 2002;28:898–907, <http://dx.doi.org/10.1007/s00134-002-1345-z>.

Arantxa Mas Serra
*Servicio de Medicina Intensiva, Hospital de la Santa Creu i
 Sant Pau, Barcelona, Spain*
 E-mail address: amass@santpau.cat