Frail or not? That is the question.

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Traditionally, mortality was considered as the most important outcome of clinical trials and observational studies in critically ill patients. However, during the last two decades, the study of morbidity among survivors of critical illness has emerged as an issue of special interest. Morbidity is an extremely broad term, and one of the important parts of its assessment is health related quality of life (HRQL). As far as HRQL is concerned, the ideal outcome of healthcare is for the patient to return to their pre-existing state or to the state expected for a person of the same age and medical condition[1]. One of the objectives of the studies of long-term outcome in critically ill patients is to define methods of early prediction, in order to allow early identification of high-risk patients who would benefit from more aggressive treatments and intense rehabilitation programs during the acute phase and the convalescent phase respectively. In this connection, it has been shown that HRQL measured as early as one month after acute respiratory distress syndrome (ARDS) has a robust relationship with HRQL measured six months after an ARDS episode, indicating that it is possible, at an early time point, to identify patients who will have a poor long-term quality of life[2].

Frailty was first described in the elderly and it can be defined as a state of increased vulnerability characterized by a decrease in physiological reserve of various systems that leads to an increased risk of adverse outcomes, morbidity, and mortality, even after minor stressor events[3]. Its recognition in critical care settings may allow improvements in prognosis and may enable physicians to provide more accurate information to patients and their relatives; it may help to guide daily bedside decision-making and help to identify vulnerable subgroups of patients that might benefit from aggressive treatments or closer follow-up. But how can frailty be measured? The two main approaches for frailty assessment are the phenotype model and the frailty index. The first approach is the phenotype model reported by Fried et al[4] in a secondary analysis of a prospective cohort study[5]. The lowest quintile of five different variables defined the presence of frailty: unintentional weight-loss, self-reported exhaustion, low energy expenditure, slow gait speed and weak grip strength. More recently, the

Canadian Study of Health and Ageing Clinical Frailty Scale (CFS)[6], an easy-to-use seven-point scale, proved predictive of death and need for institutionalization. However, neither of these methods of measuring frailty was described for use in critically ill patients. Critically ill patients may share many of the features typical of frail elderly patients and, therefore, it seems likely that frailty could be a relevant issue in critical care[7].

A recent large multicenter prospective study showed that frailty was common among critically ill patients over 50 years old[8]. Moreover, the risk of major adverse events and in-hospital and one-year mortality were also higher in frail patients. These results suggested that frailty can be easily measured in critically ill patients using the CFS scale. In this issue of Critical Care Medicine, Bagshaw et al[9] presented more detailed results from the same cohort of patients[8], aiming to analyze the association between frailty and long-term health-related quality-of-life (HRQL) among survivors of critical illness. HRQL was measured at six and 12 months, using the EuroQol (EQ-5D) Health Questionnaire and the Short-Form-12 (SF-12) Health Survey. Frailty was defined using the CFS[6]. Pre-hospital frailty was present in one in three patients. Even though they received similar intensity of organ support, frail patients had longer hospital length of stay and hospital mortality than controls. Moreover, they were less likely to return home independent and more likely to acquire new disability. Frail patients reported worse scores in global HRQL as well as in all the domains of both questionnaires compared with their non-frail counterparts.

Nonetheless, several weaknesses in the study should be borne in mind. First, all patients were recruited at ICU admission, and no data about HRQL or functional state before ICU admission were available. Second, only patients over 50 years old were included. Thus, no information is available on younger patients with other comorbidities, such as immunosuppression, who are likely to be frail. Third, CSF was only validated for the elderly, and its measurement is inherently subjective. Fourth, no

data about inflammatory markers, nutritional or functional status were reported that might shed light on the pathogenic pathways of frailty and their relations.

In conclusion, frailty seems to be common among older critically ill patients and its presence may predict poor outcomes. Its measurement has prognostic value for patient risk stratification and for identifying high-risk patients that could benefit the most from more aggressive treatment and intensive early rehabilitation. In addition, frailty measurement could be a useful tool for improving the information given to patients and their relatives. If these results are confirmed in further studies, frailty measurement could be integrated in daily practice as an easy-to-use score for critically ill patient prognostication.

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