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# Outcomes Post-ICU Admission: What Are We Aiming for?

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# Editorial

The field of intensive care medicine has been rapidly growing over the last century, particularly over the last two decades. The introduction of protocols to reduce mortality in patients with severe sepsis [1], as well as new strategies of mechanical ventilation to improve survival in patients with the adult respiratory distress syndrome (ARDS) [2], have revolutionized our current practice. An increasing number of studies have focused on strategies to improve short and intermediate-term outcomes, such as mortality during the hospitalization, and up to 180 days post-ICU admission [1-4]. Despite these important contributions, many questions still remain. Is the evaluation of the aforementioned outcomes sufficient to assess our therapeutic success?

Recent reports demonstrated that ICU survivors present a significant number of debilitating long-term complications. Quality of life is particularly affected in patients discharged from medical and surgical ICUs, specifically in subjects with ARDS, prolonged mechanical ventilation, severe trauma, and severe sepsis<sup>5</sup>. Both emotional and physical [6,7] components are involved, affecting return to work, participations in activities of daily living, and creating substantial psychological impairment in their relatives. The development of post-traumatic stress disorder and depression is not uncommon in the former group [8]. Strikingly, patients' disability may last up to 10 years post-ICU discharge, and it is usually associated with significant health care utilization and elevated costs [9].

Neurocognitive dysfunction has been recognized in up to 50% of ICU survivors, when evaluated one year post-discharge [10]. Notably, studies that have focused on cohorts of patients with ARDS have described a prevalence of cognitive impairment that reaches up to 25%, six years post-ICU dismissal [11]. Despite this astonishing reality, few patients are assessed for cognition impairment after ICU discharge. It is likely that neurocognitive dysfunction may remain undetected, as impairment is often subtle and in certain circumstances affects only few cognitive functions, such as memory [12].

Malnutrition in ICU survivors has been getting attention over the last few years. Taking in consideration that ICU patients usually receive an average of 60 to 80% of the prescribed enteral energy [13], it is not surprising that subjects with ARDS are often discharge with body weights 18% lower than their baseline [6].

Advances in patient care bring about reductions in mortality and morbidity. Once these short-term goals are achieved, health care providers should focus on how to avoid (or minimize) longterm disabilities. The development of post-ICU clinics may create the environment in which multidisciplinary teams (composed by intensivists, physical and respiratory therapists, nutritionists, pharmacists, and social workers) become available to assess ICU survivors for the development of the aforementioned complications. Utilization of tools, such as quality of life questionnaires [14], neurocognitive assessment forms [15], and medication reconciliation lists, may identify areas of concern. Timely interventions, such as physical therapy [16], cognitive training [17], and psychiatric involvement may optimize patient care and satisfaction. The time to reassess our aims has come. Whereas reduction in mortality rate remains our main short-term goal; the evaluation, prevention, and treatment of long-term complications should become a new priority.

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