

Marcelo Park¹, Ruy Camargo Pires-Neto^{1,2},
Antonio Paulo Nassar Junior^{1,3}

Awaking, exercising, sitting, walking and extubating: moving on the paradigms for mechanically ventilated patients

Despertar, exercitar, sentar-se, deambular e extubar: uma mudança nos paradigmas para pacientes mecanicamente ventilados

1. Intensive Care Unit, Emergency Department, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo - São Paulo (SP), Brazil.
2. Department of Pathology, Faculdade de Medicina, Universidade de São Paulo - São Paulo (SP), Brazil.
3. Intensive Care Unit, AC Camargo Cancer Center - São Paulo (SP), Brazil.

In the intensive care unit (ICU) patients are exposed to catheters, tubes, alarms and noise, and they experience thirst, hunger, immobility and several other sources of discomfort. How hostile is the ICU environment to patients and to caregivers? It is intuitive to put patients to sleep while they stay in this inhospitable place for life support. Moreover, during sleep, respiration is controllable, oxygen consumption may be reduced, and patients' appearances are placid to observers. Hibernation during critical illness was the gold standard of care for a long time.

In 2000, Kress et al. showed that daily interruption of continuous sedation was associated with less time spent on mechanical ventilation and less time needing ICU support.⁽¹⁾ However, critics questioned whether the price of sleep deprivation, pain, anxiety, depression, agitation, and delirium paid by those patients was really worth the benefit.⁽²⁾ The authors' response came three years later with a long-term follow-up of those patients, evaluating the psychological impact of daily sedative interruption as positive.⁽³⁾ Afterwards, these same findings were replicated in other studies.^(4,5) In one such study, daily sedative interruption was substituted with a no-sedation protocol, resulting in a reduction in the time needed for critical care support and no long-term psychological negative impact.⁽⁶⁾ Ultimately, the reduction of sedation levels associated with early passive and active mobilization was coupled with a more precocious functional independence.⁽⁷⁾ Patients were incentivized to early mobilization using a cycle ergometer and had high satisfaction in doing so.⁽⁸⁾ Currently, some ICUs propose the judicious early mobilization of critically ill patients. They consider progressive levels of mobilization, from active on-bed mobilization to exercising while sitting, exercising while standing, and ambulating. All of these levels could be offered to the patient regardless of the need for mechanical ventilation.⁽⁹⁾

During the last 10 years, the paradigm of sedation in critically ill patients has changed greatly worldwide, and ICUs are working even more with awake patients who are able to contribute to their own care. In Brazil, one trial comparing a no-sedation protocol with daily interruption showed the feasibility of using very small amounts of sedatives in a lower nurse staffing level ICU compared to the ICUs in which the previous studies were conducted. Moreover, there was not any associated harm in either group in which patients were kept awake.⁽¹⁰⁾ Furthermore, the use of deeper sedation on ICU admission was associated with a higher mortality in another Brazilian study.⁽¹¹⁾ Similar results were also found in Australian ICUs.⁽¹²⁾ Still, in Brazil Camargo Pires-Neto et al. showed the metabolic safety of early passive mobilization⁽¹³⁾ and the feasibility, safety and

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Corresponding author:

Marcelo Park
Hospital das Clínicas de São Paulo
Rua Dr. Enéas Carvalho de Aguiar, 255, 6º andar
Zip code: 05403-010 - São Paulo (SP), Brazil
E-mail: marcelo.park@hc.fm.usp.br

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patient satisfaction of using a simple cycle ergometer in mechanically ventilated patients inside the ICU.⁽⁸⁾ The same group has also performed bed-sitting, chair-sitting, and walking with intubated patients without adverse or sentinel events (unpublished data).

Study published in this issue of RBTI, conducted by Dexheimer-Neto et al.⁽¹⁴⁾ enhances the continuum of mechanically ventilated patient care in Brazil and reveals some aspects of their early mobilization protocol. The authors have shown, for the first time, in a seven month retrospective analysis including 91 patients, the feasibility and safety of performing tracheal extubation in seated patients. There was no difference in extubation success rates between seated and supine groups (82% versus 85%; $p=0.84$). Additionally, the need for tracheostomy, ICU-LOS and mortality were also the same

between the groups. Although the authors believe that this fact may hasten early mobilization, the paper does not show the data related to physical therapy practice, improvement and the real benefit for the patient. However, Dexheimer-Neto et al.⁽¹⁴⁾ showed us that a changing of culture and paradigms such as a sitting position extubation are at least as feasible and safe as the routine care.

Definitely, it is time to decrease (or even withdraw) sedatives and keep patients awake and moving. These approaches are associated with better outcomes and can be easily accomplished in our ICUs. Dexheimer-Neto et al.⁽¹⁴⁾ have showed us that patients do not need to stop moving during weaning and extubation. Therefore, we thank Dexheimer-Neto et al. for providing evidence supporting the idea that mechanically ventilated patients and their paradigms must keep moving on.

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