



011

## ICU Mobility Scale as a predictor of hospital mortality in critically ill patients

Rodrigo Cerqueira Borges<sup>1</sup>, Vanessa Chaves Barreto Ferreira de Lima<sup>1</sup>, Cristiane Papacidero<sup>1</sup>, Mauricio Tobará<sup>1</sup>, Camila Botana<sup>1</sup>, Samantha Longhi<sup>1</sup>, Andrey Wirgues De Sousa<sup>1</sup>

<sup>1</sup> Hospital Samaritano Higienópolis, São Paulo, SP, Brazil.

**Category:** Pneumology

**DOI:** 10.31744/einstein\_journal/2023ABS\_EISIC\_MV0011

Rodrigo Cerqueira Borges - <https://orcid.org/0000-0002-4578-5791>  
Vanessa Chaves Barreto Ferreira de Lima - <https://orcid.org/0000-0001-8747-7888>  
Cristiane Papacidero - <https://orcid.org/0009-0008-1716-6687>  
Mauricio Tobará - <https://orcid.org/0009-0008-9576-6354>  
Camila Botana - <https://orcid.org/0009-0004-4805-7492>  
Samantha Longhi - <https://orcid.org/0009-0005-7776-3393>  
Andrey Wirgues De Sousa - <https://orcid.org/0000-0003-4896-6464>

**Corresponding author**

e-mail: [rodrigounopar@yahoo.com.br](mailto:rodrigounopar@yahoo.com.br)

**Introduction:** The ICU Mobility Scale (IMS) was developed to provide a structured method to collect mobility data, to assist physical therapists monitoring recovery, to help researchers objectively quantify mobility milestones, and to compare the levels of mobility achieved in different studies<sup>1</sup>. However, so far, there are no data that mobility assessed by this scale is capable of predicting mortality after ICU discharge.<sup>(1)</sup>

**Objective:** To assess whether the ICU mobility scale is capable of predicting hospital mortality after ICU discharge. In addition, to evaluate the association between mobility and length of stay and loss of mobility during ICU stay.

**Methods:** Observational, prospective, unicentric study, carried out in 3 intensive care units (ICUs) of the

institution that evaluated 784 critically ill patients. The exclusion criteria were as follows: patients aged <18 years, unable to walk independently before hospitalization, neurologically impaired, incapable of communicating, with a terminal/end-of-life status, or had data loss. All other patients were included. The IMS is an 11-point ordinal scale with scores ranging from 0 (absence of mobilization) to 10 (independent ambulation). Patients were categorized into low (IMS=0 to 2), moderate (IMS=3 to 5) and high mobility (IMS=6-10). The IMS mobility scale was applied by physiotherapists at the institution and mobility was quantified: 30 days before admission, admission and discharge from the ICU. Admission diagnosis, SAPS3, SOFA in the first 24 hours, comorbidities, laboratory tests, invasive and non-invasive mechanical ventilation, among others, were evaluated.

**Results:** Patients with moderate mobility were older and had worse SAPS3 values than patients with low and high mobility ( $p < 0.05$ ). Thirty days before admission, 6.5% of patients had low or moderate mobility. There was a worsening of these values for 18.4% of patients until the day of discharge from the ICU. Approximately half of the patients did not recover their mobility when compared to before admission. Patients with moderate to low mobility had a longer hospital stay after ICU discharge than patients with high mobility  $15.0 \pm 16.0$  versus  $7.3 \pm 13.0$  days, respectively. After performing the univariate analysis, Charlson comorbidity index, age, SAPS3, IMS discharge from ICU and SOFA score were included in the multivariate Cox regression analysis to assess the factor associated with mortality after discharge from the ICU. The results showed that low mobility (OR 2.51, 95%CI: 1.18-5.31,  $p = 0.016$ ) and SAPS3 (OR 1.05, 95%CI: 1.003-1.10,  $p = 0.038$ ), were independently associated with in-hospital mortality after ICU discharge.

**Conclusion:** Low mobility values assessed on the day of ICU discharge using the IMS scale may predict mortality after ICU discharge.

## REFERENCES

1. Hodgson C, Needham D, Haines K, Bailey M, Ward A, Harrold M, et al. Feasibility and inter-rater reliability of the ICU Mobility Scale. *Heart Lung*. 2014;43(1):19-24.

**SGPP number:** Not applicable.

**CAAE:** 66606922.3.0000.5487

**Research funding:** No financial support.