

Available online at www.sciencedirect.com

SciVerse ScienceDirect

journal homepage: www.elsevier.com/locate/rmed

Chest physiotherapy effectiveness to reduce hospitalization and mechanical ventilation length of stay, pulmonary infection rate and mortality in ICU patients

Antonio A.M. Castro^{a,b,c,d,*}, Suleima Ramos Calil^{a,e}, SÚsi Andréa Freitas^{a,e}, Alexandre B. Oliveira^{a,e}, Elias Ferreira Porto^{a,b,e}

^a Physical Therapy Department of the Adventist University (Unasp), São Paulo, Brazil

^b Respiratory Diseases of the Federal University of São Paulo (Unifesp), São Paulo, Brazil

^c Heart Institute, São Paulo Medical School, São Paulo, Brazil

^d Federal University of Pampa (Unipampa), Rio Grande do Sul, Brazil

Received 27 June 2012; accepted 25 September 2012

KEYWORDS

Chest physiotherapy;
Hospital stay;
Weaning;
Pulmonary infection;
Mortality;
Intensive care unit
patients

Summary

Introduction: Although physiotherapy is an integral part of the multiprofessional team in most ICUs there is only limited evidence concerning the effectiveness of its procedures. The objectives of this study were to verify if physiotherapy care provided within 24 h/day for hospitalized patients in the ICU reduce the length of stay, mechanical ventilation support, pulmonary infection and mortality compared to a physiotherapy care provided within 6 h/day.

Methods: A cohort study was designed to assess differences between one hospital where patients were given physiotherapy care for 24 h/day and another hospital with only 6 h/day. We considered the following as outcome measurements: clinical diagnosis, medication in use, presence of associated diseases, APACHE II and SOFA scores, ICU and mechanical ventilation length of stay, development of pulmonary infections and survival.

Results: One hundred and forty-six patients were enrolled. Patients admitted in the service A presented a lower length of stay in mechanical ventilation ($p < 0.0001$), ICU stay ($p = 0.0003$), respiratory infections ($p = 0.0043$) than patients admitted in service B. No difference was found for APACHE II score ($p = 0.8$) and SOFA scores ($p = 0.2$) between groups. The mortality risk was OR 1.3 (1.01–2.33) ($p = 0.04$) for patients in the service B.

* Corresponding author. Rua Cônego Eugênio Leite, 632 apt 132, Pinheiros, 05414000 São Paulo, SP, Brazil. Tel.: +55 11 30627606.

E-mail addresses: antonioamcastro@yahoo.com.br (A.A.M. Castro), suleimacalil@gmail.com (S.R. Calil), susifreitas@yahoo.com.br (S.A. Freitas), alexandreoliveira@gmail.com (A.B. Oliveira), eliasporto@gmail.com (E.F. Porto).

^e Present address: Estrada de Itapecerica, 5859 Jardim IAE, São Paulo/SP – 05858-001, Brazil.

Conclusion: The presence of a physiotherapist in the intensive care unit contributes decisively to the early recovery of the patient, reducing mechanical ventilation support need, number of hospitalization days, incidence of respiratory infection and risk of mortality.
© 2012 Elsevier Ltd. All rights reserved.

Introduction

Advances in the management of intensive care unit (ICU) patients have improved outcomes and survival rates for this population. However, as patients survive acute illness, long-term complications are more apparent.¹ A feasible approach to obtain complications decrease is the use of physical therapy techniques in these critically ill patients.²

Physiotherapists in an ICU setting have focused to treat functional impairment especially in the patient on mechanical ventilation support. The physiotherapeutic care begins with a detailed assessment and scheduling goals of treatment. This care involves the use of techniques such as endotracheal suction of bronchial secretions, mobilization and positioning of the patient. The physiotherapy treatment is addressed to prevent and reduce potential pulmonary complications such as hypoventilation, hypoxemia and infection in order to restore muscular and pulmonary function as fast as possible.^{2,3}

Stiller et al. showed that although physiotherapy is seen as an integral part of the multidisciplinary team in most ICUs, there is only limited evidence concerning the effectiveness of physiotherapy mainly due to the variability of data reported in preceding studies.⁴ On the other hand, Burtin et al.³ showed that physiotherapy care for ICU patients promotes early recovery, reduction of hospitalization length and costs.

However, the occurrence of complications can be influenced by the quality of care provided as well as to the amount of care given for ICU patients.^{4,5} In a study conducted in 460 ICUs from 17 countries of the developed Europe, Norremberg and Vincent⁵ found considerable variation in the role physiotherapist played in the ICU. The authors showed that only 35% of services had physiotherapists working 24 h per day in ICU. Chaboyer et al.⁶ studied 77 public hospitals of Australia. They showed that 90% of institutions maintain physiotherapists in their ICU from Monday to Friday, only 25% remains rounding in weekend and 10% every day of the week. Probably, the lack of techniques standardization as well as the amount of the care provided are possibly the main factors for the negative outcome reported in most systematic reviews related to this topic.^{4,7}

We hypothesized that 24 h/day of physiotherapy care provided for ICU admitted patients is associated to a reduced length of hospitalization and required mechanical ventilation support as well as to a lower incidence of pulmonary infection and mortality. We aimed to assess if a 24 h/day physiotherapy care provided for ICU admitted patients would reduce the length of hospitalization and the required mechanical ventilation support, as well as to pulmonary infection and mortality, as compared to a 6 h/day physiotherapy care service.

Materials and methods

Study subjects

This was a cohort study which evaluated all hospitalized patients admitted to ICUs of two public hospitals in the city of São Paulo, Brazil. The protocol was sent to the research committee of the Adventist University and data assessment and analysis only begun after its approval (Adventist University ethics institutional research committee; approval number: 407). All family members agreed and signed an informed consent.

Study design

In one hospital, physiotherapy care was given in a 24 h/day basis while in the other hospital the care was provided for only 6 h/day. The enrolled patients were divided into two groups according their hospitalization admittance (service A – 24 h/day; service B – 6 h/day). The physical therapy care protocol was similar for both services prioritizing the motor and respiratory therapy to each ICU admitted patient. Physical therapy treatment protocol in both hospitals consisted in mucus removal techniques (endotracheal suctioning and manual thorax percussion) and general mobilization (upper and lower limbs). Number of repetitions and time spent for each technique as well as the time spent for each visit were similar in both hospitals. In order to assure that the same physical therapy techniques were being used in both hospitals we have observed each service for a week prior to the initiation of the study protocol.

Twenty-four hour/day physical therapy treatment was related to the period hospital had available the physical therapy assistance. Usually, a 24-hour/day care consisted of at least four visits (morning, afternoon, evening and night) of the physical therapist for patient's treatment. However, if any additional visit was to be necessary a physical therapist was available (24 h/day) to provide the needed care. On the other hand, the 6 h/day physical therapy consisted in only one visit regardless of the patient's individual need for this care.

The reason why the service B provided less physiotherapy care was due to the limited number of physiotherapists hired in. Unfortunately, that scenario is still common in the public health system in our country. No intervention was accomplished by the authors that could interfere with the hospital physical therapy routine. We included patients who were admitted into the general ICU of two public hospitals enrolled and patients eligible to physical therapy after the initial assessment of the referring doctor and the unit physical therapist. We excluded

Download English Version:

<https://daneshyari.com/en/article/6242492>

Download Persian Version:

<https://daneshyari.com/article/6242492>

[Daneshyari.com](https://daneshyari.com)