

Background: The Pediatric Intensive Care Unit of philanthropic public hospitals belonging to the Unified Health System serves children with the most varied pathologies, clinical and surgical, being a reference for many services in the metropolitan region. Technological advances in health and the improvement of public policies in the prevention, control, and fight against child injuries gradually contribute to reducing infant mortality rates.

Objectives: To identify the epidemiological profile and clinical evolution of children and adolescents hospitalized in the Pediatric Intensive Care Unit of a reference hospital in Natal/RN in physiotherapeutic follow-up.

Methods: Descriptive and retrospective study carried out at the Pediatric Intensive Care Unit of the Hospital Infantil Varela Santiago (reference in Neurosurgical and Oncological care), Natal/RN, through quantitative analysis of data from medical records of children between 0 and 15 years old in physiotherapeutic follow-up in the first quarter of 2023 (January to March). Age, sex, evolution to discharge/death, length of hospital stays, need for mechanical ventilation, and duration of mechanical ventilation were obtained by descriptive and retrospective analysis of medical records, with categorical variables expressed in absolute frequencies and percentages and continuous variables, presented as averages and standard deviation.

Results: Sixty-three (63) children were admitted to Physiotherapy, 34 boys (53.96%) with a mean age of 3.77 ± 4.29 years. The length of stay in the ICU was 14.3 ± 22.8 days; 21 children (33.33%) required invasive mechanical ventilation, with a mean IMV time of 14.8 ± 17.3 days. As an outcome, 15 children (23.80%) were transferred to other services or discharged straight home, 39 (61.90%) were discharged to the ward, 6 (9.52%) died, and 3 (4.76%) remained hospitalized.

Conclusion: We observed a predominance of male children in this Intensive Care Unit, with an average age of 3.7 years. The length of stay can be correlated with the complexity of the Unit in question (neurosurgical and oncology children), with a mortality rate below 10%.

Implications: Knowledge of the profile of this Unit implies improvement in care, optimization of treatment, reduction of expenses, and length of stay during hospitalization.

Keywords: Pediatric Intensive Care Units, Health Profile, Physical Therapy

Conflict of interest: The authors declare no conflict of interest.

Acknowledgment: Thanks to the multidisciplinary team of the Pediatric Intensive Care Unit of Hospital Infantil Varela Santiago.

Ethics committee approval: Not reported.

<https://doi.org/10.1016/j.bjpt.2024.100617>

21

EFFECTS OF NA OPTIMIZED APPROACH TO HOME-BASED RESPIRATORY CARE IN PATIENTS WITH DUCHENNE MUSCULAR DYSTROPHY: STUDY PROTOCOL FOR CLINICAL TRIAL

Ana Cristina de Medeiros Garcia Maciel¹,
Guilherme Augusto de Freitas Fregonezi¹,
Vanessa Regiane Resqueti¹, Tatiana Souza Ribeiro²,
Karen de Medeiros Pondofe¹, Rayane Grayce da Silva Vieira¹

¹ Departamento de Fisioterapia, PneumoCardioVascular Lab/HUOL e Laboratório de Inovação Tecnológica em Reabilitação, Hospital Universitário Onofre Lopes, Empresa Brasileira de Serviços Hospitalares (EBSERH), Universidade Federal do Rio Grande do Norte, Natal, Brazil

² Departamento de Fisioterapia e Laboratório de Inovação Tecnológica em Saúde (LAIS), Hospital Universitário Onofre Lopes (HUOL), Empresa Brasileira de Serviços Hospitalares (EBSERH), Universidade Federal do Rio Grande do Norte, Natal, Brazil

Background: Duchenne Muscular Dystrophy (DMD) is an inherited neuromuscular degenerative disease that leaves muscle fibers more susceptible to mechanical stress due to muscle contraction, leading to progressive muscle weakness resulting in decreased lung ventilation and an ineffective cough, favoring the onset of complications such as respiratory failure, the main cause of mortality. Management of patients with DMD aims to maintain respiratory function and involves all aspects of care, including at home.

Objective: This study aims to investigate the effects of an optimal home-based respiratory care protocol in individuals with DMD.

Methods: This is a randomized, blinded controlled trial involving patients with DMD, aged 7 years. Patients will be randomly allocated into the conventional respiratory care (CRC) and optimized respiratory care home-based (ORC) groups. Primary outcomes will be peak cough flow and number of exacerbations. Secondary outcomes will include chest wall volumes, maximal respiratory pressures, nasal inspiratory and expiratory pressure and forced vital capacity (FVC), forced expiratory volume in the 1st second (FEV1) and, FEV1 /FVC. The CRC group will receive education on respiratory care during quarterly hospital visits will consist of guidelines on positioning in bed and during fluid and food ingestion. The caregiver will be trained on aspirating the oral cavity secretions and assisting patients in coughing through air stacking by manual ventilation with a bag and an oronasal mask when needed. The ORC group will receive education on respiratory care during quarterly hospital visits and weekly home visits by a physiotherapist. During the visit, the physiotherapist will provide settings to use and improve non-invasive ventilation, aspiration of upper airways and assisted coughing through air stacking. Both groups will receive weekly telephone calls to monitor patients and provide assistance to minimize complications and exacerbations. All caregivers will be trained to monitor vital signs and peripheral oxygen saturation. A 6-month intervention is planned, the outcomes will be assessed every 3 months, and 3- and 6-month follow-up after the final evaluation.

Results: The primary and secondary results will be described as average or median for continuous variables and absolute and relative frequencies for qualitative variables. Treatment effects or differences between the outcomes (baseline, 3 months, and 6 months) of the study groups will be analyzed using an analysis of variance. The level of significance will be set as $p \leq 0.05$.

Conclusion: individuals with DMD have respiratory complications that gradually worsen and may culminate in death. These patients should receive regular daily respiratory care and assistance from caregivers and family members, as well as professional follow-up to reduce exacerbations. The challenges associated with public health care for patients, as well as the lack of knowledge among health professionals and the community, favor the worsening of DMD and, consequently, the increase in hospitalizations and public spending.

Implications: We hope that the study can demonstrate the importance of home physiotherapy with specialized assistance, which will provide comfort and safety to patients and their families. We believe that a well-implemented therapeutic program will reduce morbidity and mortality rates in patients with DMD.

Keywords: Muscular Dystrophy Duchenne, Neuromuscular Diseases, Physical Therapy

Conflict of interest: The authors declare no conflict of interest.

Acknowledgment: Not applicable.

Ethics committee approval: Not applicable.

<https://doi.org/10.1016/j.bjpt.2024.100618>