

Implications: The next step will be to test the feasibility of the intervention, co-designed with the target audience, which can lead to better results as it considers the real needs of the studied population.

Keywords: Patient and Public Involvement, Cerebral Palsy, Leisure

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

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HEART RATE VARIABILITY AND FUNCTIONAL CAPACITY OF INDIVIDUALS WITH TYPE 2 DIABETES AFFECTED BY COVID-19 IN THE LONG TERM

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Background: COVID-19 can worsen the clinical and functional condition of individuals with chronic diseases such as type 2 diabetes (DM2). There is a lack of knowledge regarding the long-term autonomic and functional impairments of individuals with T2DM affected by COVID-19.

Objectives: To assess whether individuals with DM2 affected by COVID-19 for one year or more have reduced heart rate variability (HRV) and functional capacity compared to those without a history of this disease.

Methods: This cross-sectional case-control study. The sample consisted of individuals with DM 2, with a history of COVID-19 (DMCoV Group), and without a history of COVID-19 (DM Group). All participants had their level of physical activity assessed using the International Physical Activity Questionnaire (short version). Heart rate (HR) and the following HRV measurements were evaluated at rest: standard deviation of normal R-R intervals (iNN) (SDNN); root mean square differences between successive iNN (RMSSD); percentage of successive iNN with difference >50ms (pNN50); low (LF) and high frequency (HF) spectral components in absolute (ms²) and normalized (u.n) units. Functional capacity was evaluated based on the distance covered in the Incremental Shuttle Walking Test (ISWT) in meters. Data distribution was assessed using the Shapiro-Wilk test. Variables with normal distribution are expressed as mean ± standard deviation and the others as median [interquartile range]. Categorical variables were compared using the chi-square test, and numerical variables using the unpaired t-test or the Mann-Whitney test. For all tests, a significance level of 5% was adopted.

Results: Twenty-three individuals of both sexes participated in the study, nine from the DMCoV group and fourteen from the DM group (61.78±10.39 years vs. 55.29±9.69 years, P=0.142; 33.3% women vs. 50% women, P=0.669). There was no significant difference in the

level of physical activity between the DMCoV and DM groups (P=0.235): very active (33.3% vs. 35.7%), active (22.2% vs. 50.0%), irregularly active (22.2% vs. 14.2%) and sedentary (22.2% vs. 0.0%). HR (71.9±10.5 bpm vs. 72.6±11.5 bpm; P=0.876), HRV measurements (SDNN(ms): 39.0±20.8 vs. 25.7±13.5; P=0.076. RMSSD(ms): 20.7[9.3-57.8] vs. 13.2[9.1-26.7]; P=0.403. pNN50(%): 2.2[0.5-27.0] vs. 0.4[0.0-2.7]; P=0.159. LF(ms²): 346.0[65.0-614.0] vs. 199.0[29.5-343.5]; P=0.277. HF(ms²): 125.0[26.5-705.0] vs. 82.0[26.8-253.8]; P=0.439. LF(un): 64.2±16.8 vs. 59.4±17.4 P=0.518. HF(un): 35.6±16.8 vs. 40.2±16.7; P=0.528) and functional capacity (272.5±112.7 meters vs. 373.9±105.6 meters; P=0.051) showed no significant difference when comparing the groups DMCoV and DM.

Conclusion: COVID-19 did not impair long-term cardiac autonomic modulation in individuals with T2DM. On the other hand, the fact that individuals with a history of COVID-19 walked an average of a hundred meters less on the ISWT compared to those without this history suggests impairment of functional capacity caused by COVID-19.

Implications: The findings of this study are preliminary and point to the need for future investigations involving a larger sample size and including other measures of modulation and cardiac autonomic function to confirm the results found.

Keywords: Diabetes Mellitus, COVID-19, Autonomic Nervous System

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

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UNPLANNED EXTUBATION: CHARACTERISTICS OF NEWBORN INFANTS HOSPITALIZED IN A NEONATAL INTENSIVE CARE UNIT

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Background: Unplanned extubation is an adverse event associated with endotracheal intubation and the use of invasive mechanical ventilation. Extubation failure and the need for reintubation are considered procedures that increase neonatal morbidity and mortality.

Objectives: To analyze the characteristics of newborns who had an unplanned extubation event during their stay in a neonatal intensive care unit (NICU).

Methods: The data from this study belong to a multicenter study called "Predictive factors for extubation failure in newborns admitted to a NICU: a multicenter study". Data were collected from hospitalization records from July 2017 to 2019. Newborns who used invasive mechanical ventilation through an orotracheal tube for at least 24 hours were included. Data collection was carried out in six NICUs in five Brazilian cities: Manaus-AM (North), Natal-RN (Northeast), Brasília-DF (Central-West), Belo Horizonte-MG (Southeast) and Florianópolis and São José-SC (South). The information extracted from the medical records was transcribed into Microsoft

Office Excel, and the data were analyzed using the *Statistical Package for Social Science* - version 23.0. Results are presented as mean \pm standard deviation, median (minimum and maximum amplitude) or absolute and relative frequency (n/%).

Results: Of 516 records, 50 (9.6%) events of unplanned extubations were identified in 3 of the 5 cities representing the regions of Brazil, being North (n=7/14%), Midwest (n=11/22%) and South (n=32/64%). The highest incidence of unplanned extubations was in premature newborns (n=36/72%), whose mean body weight on the day of the event was $2,312 \pm 966$ g. The median number of days on invasive mechanical ventilation was 5 (1-62) days. After unplanned extubation, 54% of the newborns needed non-invasive mechanical ventilation support (n=27) and 46% had failure and required reintubation in less than 48 hours (n=12), with a mean time between extubation and reintubation of 4.5 ± 13.72 hours.

Conclusion: Premature newborns weighing less than 2,500g presented, in this study, a higher incidence of unplanned extubation. In addition, the need for reintubation was frequent in the sample, thus indicating the adequacy of management during newborn care and handling of the endotracheal tube.

Implications: Knowing the characteristics of newborns with a higher incidence of unplanned extubation may improve care in the NICU, thus preventing the occurrence of adverse events.

Keywords: Newborn, Neonatal intensive care unit, Unplanned extubation

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

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PARTICIPATION OF INFANTS AT BIOLOGICAL RISK IS FACILITATED BY REMOTE INTERVENTION CARRIED OUT BY PARENTS – STEP PROTOCOL: RANDOMIZED CLINICAL TRIAL

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Background: Early intervention is highly recommended for infants who present some biological risk. Some principles of this intervention are well established, such as family-centered practice, parental involvement in-home therapy, and environmental enrichment. However, although participation is currently considered the main goal to be achieved in the intervention, few protocols assess this component, and even fewer use participation as a component of early intervention. Furthermore, it is essential to verify the effectiveness of remote protocols, considering that this modality of therapy delivery has been adopted more frequently in recent years.

Objectives: To verify the effectiveness of the remote STEP protocol (composed of stimulation of motor skills, participation, mother-child interaction, and environmental enrichment) in the participation of infants at biological risk at home in the first year of life.

Methods: This is a randomized controlled clinical trial. The study included 46 infants with biological risk (prematurity, low birth weight, hospitalization, cardiopulmonary resuscitation) between 3 and 9 months, who were randomized into the STEP Group (n=24, mean age=6.3 months) and the Control Group (n=22, mean age=6.4 months). Assessments were blinded, and infants were assessed for

their frequency and involvement in participation at home by Young Children's Participation and Environment Measure (YC-PEM) via telephone interview, before and after the intervention. The STEP group had goals established by the parents and the intervention consisted of specific motor training (based on the principles of motor learning, focus on repetition, variation, and increasing the complexity of the task); stimulation of participation (increased involvement of the infant in daily tasks, such as feeding and self-care, and playing with family members); guidance regarding mother-child interaction and environmental enrichment (promotion of an environment rich in stimuli, with greater possibilities for exploration). The control group had its goals defined by the therapist, and the intervention was based on motor stimulation, according to the infant's abilities. In both groups, the intervention was carried out by the parents at home, with instructions given by the therapist remotely, lasting 10 weeks (5 times a week, 30 minutes a day). Infants showed no differences in baseline measurements. A Mann-Whitney test was applied to verify the difference between the change of groups after the intervention, with a significance of 5%.

Results: The STEP group showed significantly higher improvement compared to the control group after the intervention, in the domain of frequency (p=0.005) and participation involvement (p=0.005).

Conclusion: The STEP protocol proved to be promising to enhance the participation at home of infants at biological risk in the first year of life. This result reinforces the importance of stimulating participation in activities of daily living and interactions with the family.

Implications: Early intervention protocols that stimulate not only motor domains but also involve a biopsychosocial approach, should be included in clinical practice. The results demonstrate how this model, which takes into account preferences and family involvement, encourages participation, and has a low investment cost, can improve functionality in the first year of life.

Keywords: Early intervention, Infants, Participation

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

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ASSOCIATION BETWEEN ARTHRALGIA AND TIME OF HORMONOTHERAPY IN WOMEN SUBMITTED TO ONCOLOGICAL TREATMENT

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Background: Hormone therapy is a highly effective treatment for reducing recurrence and mortality in women with breast cancer. However, it can cause several adverse effects such as arthralgia. Few studies investigate the factors that can influence arthralgia in women undergoing cancer treatment.

Objectives: to investigate the association between the duration of hormone therapy and arthralgia in women undergoing treatment for breast cancer.