

Linear mixed model was used to assess the differences in intra and intergroup. The level of statistical significance was set at 5%.

Results: Participants in Group A received an average of 31.4 (± 3.4) sessions of effective exercise and Group B received an average of 32.5 (± 3.5) sessions. In the intragroup analysis, a significant improvement in sleep quality was observed for Group A (pre: 7.1 ± 4.0 ; post: 5.1 ± 3.7 ; 95% confidence interval [95%CI]: -3.2 to -0.6), but it did not occur in Group B (pre: 6.6 ± 3.0 ; post: 5.3 ± 2.4 ; 95%CI: -3.0 to 0.5). For the intergroup analysis, no significant changes were observed (mean difference [MD]: 0.7; 95%CI: -1.6 to 2.9). For health-related quality of life, no significant changes were observed in intragroup analysis (Group A, pre: 0.86 ± 0.16 , post: 0.87 ± 0.13 , 95%CI: -0.06 to 0.07; and Group B, pre: 0.86 ± 0.1 , post: 0.91 ± 0.2 , 95%CI: -0.01 to 0.11) and in intergroup analysis (MD: 0.04; 95%CI: -0.04 to 0.1).

Conclusion: Only resistance exercise seems to be effective for sleep quality after 3 months of treatment. However, there are no differences between the exercise protocols for sleep quality and health-related quality of life. These results suggest that future studies should be conducted with the inclusion of other clinical variables, such as pain, which may influence the effect of treatment.

Implications: Intradialytic exercise based on resistance exercise can benefit patients with CKD in the improvement of sleep quality. This type of exercise might be incorporated in hemodialysis centers under the guidance of physiotherapists.

Keywords: Intradialytic Physical Exercise, Sleep quality, Quality of Life

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CORRELATION BETWEEN INSPIRATORY MUSCLE STRENGTH WITH EXPIRATORY THICKNESS, THICKENING FRACTION AND DIAPHRAGMATIC MOBILITY IN INDIVIDUALS WITH COPD

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Background: Chronic obstructive pulmonary disease (COPD) is characterized by progressive airflow obstruction of an irreversible nature, causing persistent respiratory and peripheral symptoms. Diaphragmatic dysfunction can be observed in all stages of COPD development, presenting through structural and functional alterations. This dysfunction may be associated with hyperinflation, systemic inflammation, oxidative stress, and malnutrition. These interactions affect respiratory muscle function and diaphragmatic

biomechanics, with diaphragmatic ultrasonography being a valuable method to analyze the anatomy and function of this muscle.

Objectives: To correlate respiratory muscle function with expiratory thickness, thickening fraction, and diaphragmatic mobility in individuals diagnosed with COPD.

Methods: This was a descriptive, quantitative cross-sectional study conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) recommendations and approved by the research ethics committee. To assess respiratory muscle function, an electronic computerized device (KH2; PowerBreath International Ltd. UK) was used. The evaluation of expiratory thickness, thickening fraction, and diaphragmatic mobility was performed using diaphragmatic ultrasonography with a 2.5-5.0 MHz convex transducer and a 7.5-10.0 MHz linear transducer. Statistical analysis was conducted using IBM SPSS Statistics version 25. Descriptive statistics were initially applied to characterize the data, including measures of central tendency (mean) and dispersion (standard deviation). To assess data normality, the Shapiro-Wilk test was used. The correlation between variables was analyzed using Pearson's correlation coefficient, considering a significance level of 5% ($p < 0.05$). Differences between measurements were evaluated using the paired t-test, with the effect size estimated by Cohen's d. All analyses were performed with a 95% confidence interval.

Results: The study sample consisted of 11 participants, 6 male and 5 female. When analyzing the respiratory muscle strength of the patients studied, a reduction in maximal inspiratory pressure was observed compared to predicted values for individuals of the same age group without COPD ($p < 0.002$), indicating that the sample of patients studied demonstrates respiratory muscle weakness. Regarding the correlation analyses of maximal inspiratory pressure with expiratory thickness, thickening rate, and diaphragmatic mobility, only a negative correlation ($r = -0.729$, $p = 0.011$) was observed between inspiratory muscle strength, measured by maximal inspiratory pressure, and the expiratory thickness of the diaphragm muscle. This indicates that for this population of COPD patients, the lower the inspiratory muscle strength, the greater the expiratory thickness of the diaphragm.

Conclusion: Our findings demonstrated that in the studied population of COPD patients with diagnosed inspiratory muscle weakness, there was a negative correlation between inspiratory muscle strength and the expiratory thickness of the diaphragm muscle. These factors are justified by the mechanical disadvantage found in the inspiratory muscles in this population.

Implications: The results may contribute to a better understanding of the pathology and its repercussions, thus favoring a more effective rehabilitation process and positively impacting the quality of life of individuals with COPD.

Keywords: COPD, Diaphragm, Maximal Respiratory Pressures

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EFFECTS OF INSPIRATORY MUSCLE TRAINING ON DYSPNEA AND LUNG CAPACITY IN HEMODIALYSIS PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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