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**Background:** Diabetes Mellitus (DM) is a chronic metabolic condition with a high global prevalence, capable of causing severe complications for individuals. Among these complications is diabetic neuropathy, which leads to a decline in functional performance and quality of life. Cardiovascular rehabilitation (CR) is a viable alternative for managing diabetes and its complications.

**Objectives:** To evaluate the influence of a CR program on neuro-pathic symptoms, functional performance, quality of life, knowledge, and attitude toward DM in individuals with diabetic neuropathy.

**Methods:** This is a case series study using tests to assess functional performance (Timed Up and Go, 6-Minute Walk Test, and Short Physical Performance Battery), specific scales for diabetic neuropathy screening (Neuropathic Symptoms and Signs Scale, Visual Analog Scale for Pain), and questionnaires designed to investigate aspects related to fatigue, quality of life, knowledge, management, and acceptance of DM. The intervention consisted of an exercise program conducted twice a week, totaling 16 sessions.

**Results:** Fourteen patients with type 2 DM, with a mean age of  $60.3 \pm 9.2$  years, participated in the study. A statistically significant improvement was observed in pain scores ( $p = 0.028$ ) and neuropathic symptoms ( $p = 0.010$ ), performance in the 6-Minute Walk Test ( $p = 0.028$ ), coping attitude toward DM ( $p = 0.014$ ), and quality of life domains (functional capacity, physical and emotional aspects, pain, vitality, and summarized mental component).

**Conclusions:** The CR program proved beneficial for patients with diabetes and neuropathy, leading to positive changes in functional aspects, symptom reduction, improved quality of life, and better coping with DM. Further studies and viable alternatives for implementing a program that includes physical exercise and health education for the diabetic population are warranted.

**Implications:** This research highlights the benefits of a twice-weekly exercise program for patients with diabetes and neuropathy, reinforcing the important role of physical exercise as an ally in diabetes treatment, bringing positive changes to the individual's biopsychosocial context.

**Keywords:** Diabetes Mellitus, Diabetic neuropathies, Exercise therapy

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## COMPARISON OF RESISTANCE VERSUS AEROBIC EXERCISE DURING HEMODIALYSIS IN CHRONIC RENAL PATIENTS: A RANDOMIZED CONTROLLED TRIAL

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**Background:** Musculoskeletal disorders are common in hemodialysis (HD) patients. The duration and frequency of HD procedures contribute to immobility and a sedentary lifestyle, which, combined with changes in the disease itself, affect frailty and fatigue. These changes can be reversed through the adoption of intradialytic exercise programs.

**Objectives:** To investigate the effectiveness of resistance compared to aerobic exercise during the intradialytic period on peripheral muscle strength, walking speed, frailty, and fatigue in patients with chronic kidney disease.

**Methods:** In this randomized controlled trial, 32 patients were randomly allocated into two groups: Resistance exercise group (Group A), that included 8 exercises using elastic bands, dumbbells, and a Swiss ball, with 2 sets of 8 to 12 repetitions, an interval of 2 to 3 minutes between sets, and an intensity of 6 on the modified OMNI scale; and Aerobic exercise group (Group B), which consisted of 20 minutes of exercise on a cycle ergometer at an intensity between 5 and 7 on the modified Borg scale. All intervention protocols were performed during the first 90 minutes of hemodialysis, with the patient seated in a reclined chair. Peripheral muscle strength was assessed using the Saehan handgrip dynamometer and the 30-second sit-to-stand test; gait speed and frailty were assessed using the Fried Phenotype Model, and fatigue was evaluated using the Multidimensional Fatigue Inventory (MFI-20). The assessment of data normality was performed through visual inspection of histograms. The linear mixed model was used for intra and intergroup analyses. The level of statistical significance was set at 5%.

**Results:** Group A performed an average of  $31.4 (\pm 3.4)$  effective exercise sessions and Group B performed an average of  $32.5 (\pm 3.5)$  effective exercise sessions. There was no significant differences, between groups, in the results of 30-second sit-to-stand test (Group A, pre:  $10.1 \pm 2.0$  and post:  $14.9 \pm 4.2$ ; Group B, pre:  $10 \pm 2.3$  and post:  $16.2 \pm 2.7$ ), handgrip strength test (HST) (Group A - pre:  $25.7 \pm 8.7$  kgf and post:  $28.1 \pm 9.7$ kgf; Group B - pre:  $29.1 \pm 9.4$ kgf and post:  $29.6 \pm 8.70$ kgf), and gait speed test (Group A - pre:  $1.00 \pm 0.20$  m/s and post:  $1.3 \pm 0.3$  m/s; Group B - pre:  $1.1 \pm 0.1$  m/s and post:  $1.5 \pm 0.2$  m/s). There was a decrease in the number of frail patients in both groups (18.8%), but no significant differences were observed between groups for the total fatigue score (Group A - pre:  $55.9 \pm 6.2$  and post:  $55.6 \pm 7.9$ ; Group B - pre:  $58.9 \pm 6.6$  and post:  $56.6 \pm 8.8$ ).

**Conclusion:** No significant differences were observed between intradialytic exercise interventions in terms of peripheral muscle strength, walking speed, frailty, and fatigue. It is suggested that further studies can be conducted on the subject, in addition to the inclusion of variables such as pain, which may influence the results of the outcomes studied here.

**Implications:** Regardless of the type of exercise performed during hemodialysis, patients with chronic kidney disease can have positive effects on muscle strength, walking speed, frailty, and fatigue.

**Keywords:** Intradialytic Physical Exercise, Muscle Strength, Frailty

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## DIAGNOSTIC ACCURACY OF PHYSICAL FUNCTION TESTS FOR RISK OF FALLS IN INDIVIDUALS ON HEMODIALYSIS

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