CHRONIC KIDNEY DISEASE. REHABILITATION

SP450 CHANGING DIABETIC DIALYSIS PATIENTS PHYSICAL FUNCTIONING WITH EXERCISE TRAINING

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Introduction and Aims: Diabetic patients with end-stage renal disease admitted to dialysis are increasing dramatically and are at a greater risk for cardiovascular events. The importance of physical activity has been widely addressed, specifically regarding chronic conditions. The American Heart Association and American College of Sports Medicine published a set of recommendations applying to older adults and chronic conditions.

The aim of this study was to assess if an exercise program would be feasible in a group of elderly, frail and diabetic patients on maintenance hemodialysis and if their exercise capacity could be improved.

Methods: All 45 diabetic patients from our Unit were given the possibility to exercise, irrespective of degree of functional impairment. Nineteen patients were recruited (6 men, 13 women). 15 patients (5 men), mean age 72±10 years, mean dialysis time 13±7 months, mean Charlson’s Comorbidity Index of 4 (54 % patients), completed 16 weeks of supervised aerobic and resistance training, 3 times a week. Aerobic exercise training was performed with cycle-ergometers or treadmills for 20 minutes, before dialysis sessions. Resistance training was performed during the second hour of dialysis, using elastic resistance bands for legs and dumbbells for arms, for 20 minutes, with the vascular access arm being exercised before dialysis.

Results: Patients showed enhanced results for all tests of physical performance compared with baseline.

The STS-5 (sit-to-stand-to-sit 5) was 14.5±15.9 seconds at baseline (range: 10.7 - 74) and 11.1±4.9 seconds at 16 weeks (range: 7.7 - 24.7); STS-60 (sit-to-stand-to-sit 60) was 22.0±6.3 times at baseline (Min 4; Max 26.3) and 24.3±6.5 at 16 weeks (range 12 - 38); 6MWT was 265±108.9 meters at baseline (range: 115 - 439) and 315±133 at 16 weeks (range: 152 - 615). All values were of statistical significance with p<0.01. The mean value at baseline for 6MWT was 265 meters, which is below the cut-off value for increased risk of morbidity and mortality.

Conclusions: None of the patients experienced any accident or complications due to the exercise program. Exercise training is safe and efficacious even for elderly, frail, disabled and diabetic patients on hemodialysis. All physical performance tests showed increased values when compared with baseline. The STS-5, a surrogate measure of muscle power, increased by 24% and 6MWT, a surrogate measure of endurance and power, increased by 18%.