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Abstract

Effects of a resistance training program on fitness, muscle mass and quality of life in kidney transplant recipients

Sonsoles Hrernandez Sanchez[1, 3], Carrero JJ[2] and Ruiz JR[1]

[1]*University of Granada, Granada, Spain*
[2]*Karolinska Institute, Sweden*
[3]*University of Castilla-La Mancha, Spain*

Abstract:

Objective: To investigate the effects of 10-week resistance exercise-based intervention on muscular strength, cardiorespiratory fitness, muscle mass and structure, and quality of life in kidney transplant recipients.

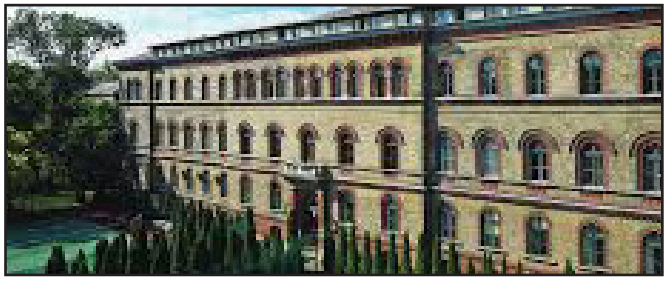
Design and setting: All participants underwent a familiarization period of the tests, which were conducted one week later and after a 10-week period.

Subjects: Sixteen kidney transplant recipients were recruited and voluntarily participated in the study.

Main outcomes measures: In each time point participants completed: (i) a quality of life questionnaire (KDKoL), (ii) muscle thickness assessment by ultrasonography (iii) lower limb muscle strength tests, (iv) fitness tests and (v) routine biochemical analyses.

Results: The classical SF-36 domains did not differ between groups after the intervention. There were no between group differences after the intervention in most of domains related to the kidney disease-specific, with the exception of the scales of "effects of kidney disease" and "burden of kidney disease" that significantly improved after the intervention as compared to placebo. There were significant differences in handgrip levels after intervention in the training group vs. control (delta handgrip strength in controls -0.38 ± 1.50 (95% confidence interval [CI], -2.50 to 0.43 kg) vs. 1.87±0.835 (-0.64 to 3.28 kg) in the training group; P=0.01). Patients in the intervention group improved by 54.6 ± 24.4 meters in the six minute walk test, whereas patients in the control group improved 8.6 ± 26.2 meters (P<0.006 for group differences). Patients in the intervention group employed less time in the get up and go test after the intervention (-0.2 ± 0.4 seconds) whereas patients in the control group took more time (0.2 ± 0.4 seconds; P=0.003 for group differences).

Conclusions: Ten weeks of resistance training improved several measures of physical function in kidney transplant patients, and the patients perceived this as a reduction in the burden felt for their disease.



Biography:

Sonsoles Hrernandez Sanchez is a Founder and Director at Trainsplant. She is a Doctor with International Mention in Biomedicine in University of Granada and Karolinska Institute, Stockholm. Research line: Physical exercise in people with chronic kidney disease and transplantation. She did her research in CC of the AF and sport in University of Leon. Hernandez Sanchez is the Head of the Department of physical exercise of the National Federation of Associations for the Fight Against Kidney Diseases (ALCER) Spain.

Publication of speakers:

1. Patrizia Calella, Sonsoles Hernandez Sanchez, Carlo Garofalo, et al; Exercise training in kidney transplant recipients: a systematic review; J Nephrology; January 2019
2. Sonsoles Hernandez Sanchez, David Garcia Lopez, Alejandro Santos Lozano, Gustavo González-Calvo, et al; Physical assessment, fitness and quality of life in patients with different renal replacement therapies; J Nephrology Nursing; June 2015
3. Garcia-Lopez David; Hernandez-Sanchez Sonsoles, et al; Free-Weight Augmentation With Elastic Bands Improves Bench Press Kinematics in Professional Rugby Players; J Strength and Conditioning Research; September 2016
4. Sonsoles Hernandez Sanchez; Benefits of exercise in solid organ transplant recipients; J Human Movement

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