SciTechnol
Journal of
Nephrology and Renal Diseases
Abstract

Blood Flow Restriction Training Blunts Chronic Kidney Disease Progression in Humans

Hugo de Luca Corrêa
Catholic University of Brasilia, Brasilia, Brazil

Abstract:
Purpose: to verify the effect of six months of periodized resistance training (RT) with and without blood flow restriction (BFR) in patients with stage two chronic kidney disease (CKD) on glomerular filtration rate (GFR), uremic parameters, cytokines, and Klotho-fibroblast growth factor 23 (FGF23) axis.

Methods: 105 subjects were randomized in 3 groups of 35 each: control (CTL), RT, and RT+BFR. A first visit was required for an anamnesis to evaluate the number of medications, and anthropometric measurements (body weight, height, and body mass index). Muscle strength (1-RM) was assessed. Venous blood samples were collected at baseline and after six months of training in all patients for the analysis of markers of renal function and integrity, as well as for the determination of the inflammatory profile. Statistical significances were adopted with $p < 0.05$.

Results: both training therapies attenuated the decline of GFR ($p < 0.05$). The majority of CTL patients declined to stage three CKD (88.5%), whereas fewer incidents were noted with RT (25.7%) and RT+BFR, (17.1%). Improved uremic parameters, as well as inflammation (IL-6; IL-10; IL-15; IL-17a; IL-18; TNF-⍺) and Klotho-FGF23 axis in RT and RT+BFR ($p < 0.05$) were observed. Monocyte chemoattractant protein-1 (MCP-1) was not changed ($p > 0.05$) but presented a large effect size (Cohen's d), demonstrating a propensity for improvement.

Conclusion: six months of periodized RT with and without BFR in patients with stage two CKD attenuated the progression of the disease by maintaining GFR, improving uremic parameters, cytokine profile regulation, and Klotho-FGF23 axis.

Biography:
Mr. Hugo de Luca Corrêa graduated in Physical Education, Catholic University of Brasilia, Brasilia, Brazil.

Publication of speakers:

- Med Sci Sports Exerc. 2020 Aug 21. doi: 10.1249/MSS.0000000000002465. Online ahead of print.PMID: 32826635
- Moura SRG, Corrêa HL, Neves RVP, Santos CAR, Neto LSS, Silva VL, Souza MK, Deus LA, Reis AL, Simões HG, Beal FLR, Moraes MR, Navalta JW, Prestes J, Gadelha AB, Rosa TDS.Exp Gerontol. 2020 Oct 1;139:111017. doi: 10.1016/j.exger.2020.111017. Epub 2020 Jul 4.PMID: 32634551
- Corrêa HL, Moura SRG, Neves RVP, Tzanno-Martins C, Souza MK, Haro AS, Costa F, Silva JAB, Stone W, Honorato FS, Deus LA, Prestes J, Simões HG, Vieira EC, de Melo GF, Moraes MR, Rosa TS.Sci Rep. 2020 Jul 16;10(1):11708. doi: 10.1038/s41598-020-68602-1.PMID: 32678132

22nd World Nephrologists Summit; September 07-08, 2020; Tokyo, Japan

Citation: Hugo de Luca Corrêa; Blood Flow Restriction Training Blunts Chronic Kidney Disease Progression in Humans; September 07-08, 2020; Tokyo, Japan