

4 IMPACT OF AEROBIC EXERCISE ON VISCERAL FAT OF NONDIALYSIS DEPENDENT OVERWEIGHT CKD PATIENTS: A PILOT STUDY

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This is a randomized controlled study that aimed to assess the impact of aerobic exercise on visceral fat of overweight CKD patients. Twenty-six sedentary patients in stages 3–4 of CKD (73% men; 52.3 ± 8.6 years, BMI 30.6 ± 4.3 kg/m²) were included. Patients were assigned to aerobic exercise group (EG; $n=13$) or control group (CG; $n=13$). The aerobic training was conducted on a treadmill at the ventilatory threshold three times per week during 12 weeks. The CG patients remained without practicing exercise during follow up. Visceral and subcutaneous fat were assessed by computed tomography, and lean body mass (LBM) by DEXA. At the end of 12 weeks, visceral fat decreased 5% in EG and increased 3% in CG ($p=0.02$). Waist circumference decreased 1.5% in EG and increased 0.8% in CG ($p=0.02$). No changes were observed in body weight and subcutaneous fat. LBM tended to increase in EG and decrease in CG ($p=0.09$). In addition, blood pressure decreased ($p < 0.01$) despite no change in body weight, 24 h urinary sodium and antihypertensive medication. Our results suggest aerobic exercise as an effective approach to reduce visceral fat while maintaining lean body mass in CKD patients.

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44 HOME-BASED VS IN CENTER AEROBIC EXERCISE: IMPACT ON CARDIORESPIRATORY (CR) AND FUNCTIONAL CAPACITIES (FC) OF NONDIALYSIS DEPENDENT OVERWEIGHT CKD PATIENTS

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We tested the hypothesis that home-based exercise (HE) was similarly effective to the in center exercise (CE) on CR and FC. This is a randomized controlled study that included 35 sedentary patients (23 men; 53 ± 8.1 years, BMI 30.7 ± 4.2 kg/m², creatinine clearance 30.9 ± 4.2 mL/min; DM 23%). Patients were randomly assigned to HE ($n=11$), CE ($n=12$) or control (CO, $n=12$) groups. CE and HE underwent to an identical exercise program, three times per week during 12 weeks. The CO group remained without practicing exercise during follow up. The CE patients trained on a treadmill while the HE patients were instructed how to perform the training at home and were monitored by phone once a week. The training resulted in increase 20% and 19% in maximal ventilation ($p < 0.05$), 14.5% and 11% in speed of VO₂peak ($p < 0.01$), 25.7% and 17.5% in speed of ventilatory threshold ($p < 0.01$) and 20% and 17.2% in speed of respiratory compensation point ($p < 0.001$) only in CE and HE groups respectively. In the exercise groups, improvement in functional capacity tests such as 2-min step ($p < 0.01$), sit-stand ($p < 0.001$) and arm curl ($p < 0.001$) was observed. Blood pressure decreased only in the exercise groups ($p < 0.01$), in conclusion HE promoted similarly effective that CE and can be effectively applied for this particular group of patients.

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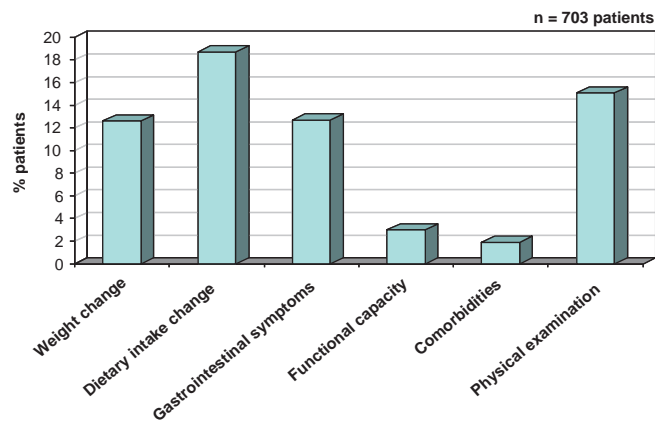
45 DESCRIPTION OF THE SUBJECTIVE GLOBAL ASSESSMENT COMPONENTS IN NONDIALYSIS-DEPENDENT CHRONIC KIDNEY DISEASE PATIENTS

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Subjective Global Assessment (SGA) is a well-recognized and valid tool for diagnosing malnutrition in chronic kidney disease (CKD). SGA is based on components as weight change, dietary intake change, gastrointestinal symptoms, functional capacity, comorbidities related to nutritional condition and physical examination. Herein, we aimed at investigating which SGA alteration was the most prevalent in patients in the nondialysis stages of CKD.

Seven-hundred and three patients were studied (91% CKD stages III and IV, eGFR 34.1 ± 13.7 mL/min, 64 ± 13.3 years, 58% men, 45% diabetics, BMI 27.9 ± 7.4 kg/m²). Each of the SGA components was scored from 1 to 7 according to the severity, and values ≤ 5 were considered as abnormal. Malnutrition was observed in 11.5% of the patients, of which 10.5% mild to moderately malnourished (score of 3–5) and 0.7% severely malnourished (score of 1 or 2). The frequency of alterations in the SGA components is demonstrated below:

As can be seen dietary intake change was the most frequent alteration among the SGA components in nondialysis CKD patients.



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46 VITAMIN D RECEPTOR ACTIVATION AND A NOVEL CLASSIFICATION OF CARDIO-RENAL SYNDROME

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Due to increasing survival rate of cardiac and renal disease patients, Cardiorenal syndrome (CRS), a combination of these two is becoming an important problem. Some classifications have been proposed for CRS but for clinical approach, it would be more appropriate to emphasize the pathophysiologic pathways to classify CRS into: 1) hemodynamic, 2) atherosclerotic, 3) uremic, 4) neurohumoral, 5) anemic-hematologic, 6) inflammatory-oxidative, 7) vitamin D receptor (VDR) related, and 8) multi-factorial CRS. Recently, it has been revealed that vitamin D and its receptor play an important role in the CRS. Decreased 1- α -hydroxylase activity, nutritional deficiency, decreased Megalin receptors, and increased 1-24-hydroxylase activity are major causes for vitamin D depletion in CKD. Decrease in GFR, renal mass and 1- α -hydroxylase expression along with phosphate retention, increased FGF-23, and loss of both 1- α -hydroxylase and 25(OH)vitamin D are important factors for decreased 1- α -hydroxylase activity. Suboptimal or defective VDR activation may play a role in causing or aggravating CRS. Newer VDR activators such as vitamin D mimetics (e.g. paricalcitol and maxacalcitol) are promising agents. Some studies have confirmed the survival advantages of D-mimetics as compared to non-selective VDR activators. Higher doses of D-mimetic per unit of PTH (paricalcitol to PTH ratio) are associated with greater survival, and the survival advantages of African American dialysis patients could be explained by higher received doses of paricalcitol. More studies are needed to verify these data and to explore additional avenues for CRS management via modulating VDR pathway.

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