

Low protein diet for patients with chronic kidney disease (CKD) during conservative treatment (CT) aims to reduce the progression and symptoms of the CKD. This study aimed to evaluate the glomerular filtration rate (GFR) in patients receiving low protein diet during 3 years (\approx 4 clinic visits per year). The study comprised 321 patients with CKD on CT from a *Renal Nutrition Ambulatory of a Federal Lagoa Hospital*. All patients received dietary prescription according to NKF-K/DOQI recommendations and the diet adherence was evaluated with patients being asked whether they were adhering to the treatment and through reported dietary intake (2 weekdays and 1 weekend day). Patients were divided in 4 groups: diabetes Mellitus (DM) patients who adhered (G1) and not adhered to the diet (G2), and patients without DM who adhered (G3) and not adhered to the diet (G4).

Groups	Before	After
<i>Group 1-DM (n=83)</i>		
Cr (mg/dL)	1.9 \pm 0.6	1.6 \pm 0.7*
GFR (mL/min)	37.8 \pm 14.4	46.6 \pm 17.3**
<i>Group 2-DM (n=106)</i>		
Cr (mg/dL)	1.9 \pm 0.7	2.03 \pm 0.7
GFR (mL/min)	43.8 \pm 17.3	42.6 \pm 13.3
<i>Group 3-non-DM (n=75)</i>		
Cr (mg/dL)	2.2 \pm 0.8	1.8 \pm 0.8*
GFR (mL/min)	34.3 \pm 13.1	40.9 \pm 21.7
<i>Group 4-non-DM (n=57)</i>		
Cr (mg/dL)	2.2 \pm 0.8	2.4 \pm 1.0
GFR (mL/min)	39.9 \pm 19.0	35.2 \pm 18.4

There was no difference between diabetic and non-diabetic patients who adhered to the diet. Both groups showed improvement on GFR. In conclusion, these analyses suggest that a lower protein intake retards the progression of renal disease.

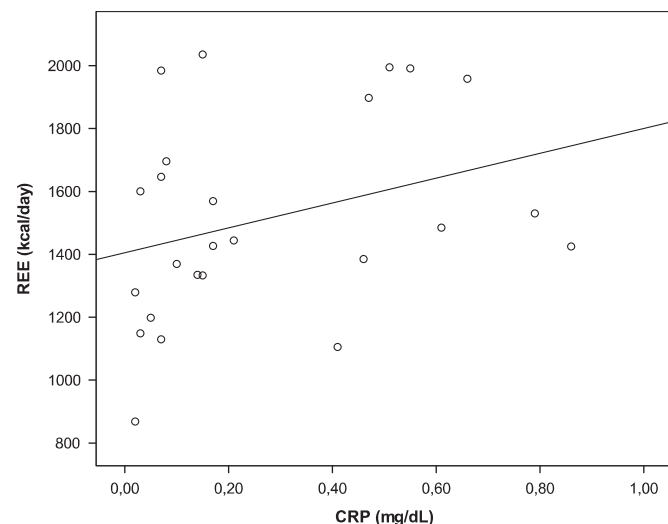
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150 INFLAMMATION INCREASES THE RESTING ENERGY EXPENDITURE IN HEMODIALYSIS PATIENTS

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Resting energy expenditure (REE) is the predominant component of total daily energy expenditure (TEE). Metabolic disorders and comorbidities, such as inflammation and diabetes, can affect the REE in hemodialysis (HD) patients. The objective of this study was to evaluate the relationship between inflammation and REE estimated by TEE in HD patients. Twenty-five HD patients (54.5 \pm 11.7 years, 15 men, BMI, 24.4 \pm 4.7 kg/m², urea clearance (Kt/V_{sp}) of 1.43 \pm 0.26 and 58.2 \pm 42.7 months on HD) were studied. TEE was measured during two days (one dialysis and one



nondialysis day) by SWA (SenseWear Pro2 Armband, BodyMedia Inc, Pittsburgh, PA, USA). This monitor provides directly the TEE and the physical active energy expenditure (PAEE); the REE measurement was obtained by the subtraction of PAEE and thermic effect of food (approximately 10% of TEE) from TEE. C-reactive protein (CRP) was measured by immunoturbidimetric method. The REE was 1677.7 \pm 273.5 kcal/d for men and 1267.0 \pm 221.6 kcal/d for women ($p < 0.0001$). The CRP levels values were 0.27 \pm 0.26 mg/dL and nine patients (36%) had CRP > 0.3 mg/dL, compatible with chronic inflammation. A trend for high REE was observed in patients with inflammation (1865 \pm 216 kcal/d for men with CRP ≥ 0.3 mg/dL and 1584 \pm 257 kcal/d with CRP < 0.3 mg/dL ($p = 0.05$); 1361.4 \pm 181.5 kcal/d for women with CRP ≥ 0.3 mg/dL and 1204.1 \pm 238.2 kcal/d with CRP < 0.3 mg/dL ($p = 0.27$). CRP was positively correlated with REE ($r = 0.41$; $p = 0.04$). In conclusion, chronic mild inflammation can increase the REE in HD patients.

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151 EFFECTS OF GRAPE POWDER SUPPLEMENTATION ON INFLAMMATION IN HEMODIALYSIS PATIENTS.

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Polyphenols and antioxidants anti-inflammatory have been considered pharmacological agents to combat oxidative stress in chronic diseases due the reduction in the formation of free radicals (FR). Hemodialysis (HD) patients have an imbalance between oxidant and antioxidant activity, with increased levels of FR and consequently an increase of lipid peroxidation, thereby raising the risk for cardiovascular disease (CVD). The beneficial health effects of grape juice or red wine for these patients have been attributed to the antioxidant activity of its polyphenols. Then, this study aimed to evaluate the effects of grape powder supplementation on inflammation and glutathione peroxidase levels in hemodialysis (HD) patients. Thirty-two HD patients from CIN, RJ, Brazil were studied and randomly into two groups: placebo group- PG (16 patients, 9 men, 52.7 \pm 13.7 yrs) and experimental group EG (16 patients, 9 men, 53.0 \pm 9.8 yrs). Each patient received 12g/day of powder grape with grape jelly or only grape jelly (placebo) during 5 weeks. The lipid profile, C-reactive protein (CRP) levels and glutathione peroxidase (GPx) activity were evaluated before and after supplementation (Table). The data suggest that the consumption of grape powder was effective to increase the activity of GPx and decreasing the progression the inflammation. Thus, our results indicate that grape powder plays an important role as an antioxidant agent in HD patients.

	Placebo Group		Experimental Group	
	Before	After	Before	After
CRP (mg/mL)	2.6 \pm 0.2	2.8 \pm 0.2*	2.6 \pm 0.2	2.6 \pm 0.2
LDL-C	86.3 \pm 38.8	94.4 \pm 34.3	80.5 \pm 25.0	82.9 \pm 22.1
Total cholesterol	154.6 \pm 44.9	163.3 \pm 44.8	143.9 \pm 29.2	145.4 \pm 28.3
GPx (U/g prot)	17.5 \pm 9.8	29.1 \pm 30.7	19.7 \pm 20.3	41.0 \pm 27.7*

* $p < 0.05$

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152 SHORT-TERM EFFECTS OF DIETARY PROTEIN RESTRICTION ON THE PROGRESSION OF CHRONIC KIDNEY DISEASE IN PATIENTS UNDERGOING CONSERVATIVE TREATMENT

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In chronic kidney disease (CKD) patients undergoing conservative low-protein diets ameliorate uremic symptoms and certain CKD complications and, can slow progression of renal disease. The aim of this study was to determine the short-term effects of protein restriction on the progression of CKD. Twenty-six CKD patients from the Renal Nutrition Ambulatory, Nutrition Faculty, UFF, Niterói, Brazil (63.1 \pm 13.7 years, 13 men, and %

body fat for men, $25.0 \pm 6.9\%$ and for women, $36.0 \pm 3.3\%$) were analysed. All patients were originally prescribed low-protein diets and energy according to NKF-K/DOQI recommendations. One month later, their body mass index, creatinine, urea and creatinine clearance (calculated by Cockcroft-Gault) were evaluated (Table). The patients reported good adherence diet in clinical records. In spite of the short period of time, the dietary protein restriction during conservative treatment seems slowing the progression of kidney disease.

Parameters	Before (n=26)	After (n=26)
BMI (kg/m ²)	28.6 ± 6.8	28.0 ± 6.9*
Creatinine (mg/dL)	2.1 ± 0.8	2.0 ± 0.9
CrCl (mL/min)	35.8 ± 15.7	40.9 ± 20.0*
Urea (mg/dL)	85.5 ± 29.4	77.4 ± 32.3

*p < 0,005

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THE IMPORTANCE OF AN EARLY EXERCISE AND NUTRITION INTERVENTION AMONG RENAL TRANSPLANT RECIPIENTS

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Typical long-term inactivity due to the dialysis, necessarily leads to a decline of the recipient's fitness level. In our study we assessed the impact of regular exercise and nutrition intervention on physical fitness and the quality of life (QoL) in the first year after kidney transplantation (Tx). Group of patients: (M/F, 11/10, age 59.1 ± 10.8 yrs/ 57.0 ± 8.4 yrs; $69.9 \pm 25.4/ 65.1 \pm 17.8$ days post-Tx), randomized into 4 subgroups: exercise (E), exercise + nutrition (E+N), nutrition (N), control (C). For testing the physical fitness and QoL we used the "Senior Fitness Test Manual" and KDQOL-SFTM questionnaire. Exercise intervention focused mainly on the joint mobility, muscle strength, nimbleness, dynamic stability, and cardio respiratory endurance (3 times/week; 60 minutes; 6 months). Nutrition intervention included substitution with keto-amino-acides. Results were analysed with the non-parametric Wilcoxon and Kruskal-Wallis Test.

Both physical fitness as well as QoL in the first year after Tx improved in all patients. Statistically significant differences in the dynamics of physical fitness were observed 1.- 4. months post Tx in four from six tests ($p \leq 0.01$) and 1.-8. months post Tx in five from six tests ($p \leq 0.05$). The greatest improvement in physical fitness was achieved by the E+N group followed by N, E and C groups. QoL improved in the groups E+N and N in seven of the eight dimensions, however the results were statistically insignificant.

In conclusion, the combination of an exercise and nutrition intervention was the most effective and could give each patient an opportunity to achieve an optimal physical and psychological level almost equal to their original condition.

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PHYSICAL AND PSYCHOLOGICAL FUNCTIONS IN PATIENTS WITH THE END-STAGE RENAL DISEASE

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Understanding the physical and psychological status in patients with the end-stage renal disease (ESRD) on renal dialysis treatment (RDT) is a current issue of high importance due to a rising number of elderly patients. The aims of the study in ESRD patients were: 1) to test physical and psychological functions; 2) to propose suitable physical activities. Group of patients: (M/F, n=34/33, age 67.0 ± 12.7 yrs/ 64.0 ± 13.1 yrs). For testing we used Senior Fitness Test Manual, KDQOL-SFTM-questionnaire SF36, WHOQOL-BREF, Importance of quality of the life (QoL) - WHOQOL-100. Results were analysed using descriptive statistics and non-parametric Wilcoxon signed-rank test.

In general, both the physical and psychological conditions were severely deteriorated in most components as compared to the non-renal population. Physical fitness was below the normal range of standard values, or to its lower limits, particularly in the tests requiring some degree of muscular strength of the lower limbs and physical efficiency. QoL results showed that in SF36 ESRD patients coincided with the normal range only in the domain of EWB-mental health. The questionnaire WHOQOL-BREF showed that QoL was: significantly lower in ESRD patients than in healthy population only in the domain "physical health". The most important domains of WHOQOL-100 were the domain of "independence" (the ability to take care of everyday needs - 4.5 and the ability to move - 4.3), "environment" (especially items related to the quality of health care - 4.4).

The ESRD patients, especially the elderly, should be encouraged to pay attention to increased physical activity levels in order to maintain functional independence and high quality of the life for as long as possible.

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GHRELIN AMELIORATES WASTING, CARDIOVASCULAR COMPLICATIONS, INFLAMMATION AND MORTALITY IN CHRONIC KIDNEY DISEASE

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Wasting, cardiovascular complications and inflammation are known risk factors associated with high mortality in patients with chronic kidney disease (CKD). Ghrelin is an appetite-regulating hormone with additional effects in the modulation of systemic inflammation and the cardiovascular system. CKD patients with low serum ghrelin have high mortality risk and may benefit the most from ghrelin therapy.

Aim to investigate the effects of ghrelin on cachexia, muscle wasting, cardiovascular complications, inflammation and mortality in CKD.

C56BL/6J mice underwent 2-stage 5/6 nephrectomy (CKD) or sham operation (S). Ghrelin (150 nmole/kg/day) or saline was given to CKD or S mice. Over 90-days, mortality rates of 9 month old ghrelin-treated CKD mice (15%) and S mice (0%) were significantly better than those of CKD mice (57.5%). The cumulative food intake of the CKD + ghrelin mice was significantly increased than CKD mice ($p < 0.01$). CKD + ghrelin mice gained more weight than CKD mice ($p < 0.01$). CKD + ghrelin mice gained lean body mass and fat mass while CKD mice lost lean and fat mass ($p < 0.01$). 24 hr metabolic rate was increased and efficiency of food consumption was decreased in CKD mice as compared to S mice ($p < 0.001$). Ghrelin normalized these abnormalities in CKD mice ($p < 0.01$).

Ghrelin significantly improved systolic hypertension in CKD mice ($p < 0.01$). Left ventricular hypertrophy (LVH) was ameliorated in CKD+ghrelin mice as compared to CKD mice ($p < 0.01$). TNF- α and IL-6 mRNA levels were significantly increased in gastrocnemius and cardiac muscles of CKD mice and ghrelin significantly decreased the expression of these inflammatory cytokines in CKD mice ($p < 0.01$).

Our studies indicate that ghrelin ameliorates wasting, systemic hypertension and LVH with associated improvement in inflammation and mortality in CKD.

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ASSESSMENT OF MALNUTRITION IN AN INCENTRE HAEMODIALYSIS UNIT- SINGLE CENTRE EXPERIENCE

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Malnutrition is highly prevalent among haemodialysis patients, but the best method for assessing nutritional status remains unclear. Historically, Dietitians' use the Subjective Global Assessment (SGA) or Patient Generated Subjective Global Assessment (PG-SGA) tool to assess nutritional status of in centre haemodialysis patients. In 2001 a new tool called the Malnutrition Inflammation Score (MIS) was developed by Zadeh et al.

We conducted an annual malnutrition audit on patients who regularly attend the in-centre haemodialysis units at Gold Coast Hospital District using MIS and SGA/PG-SGA.

An annual malnutrition audit was conducted over a 2 month period with 100 in centre Haemodialysis patients across 2 centres. For each patient a nutritional