

4 BODY CELL MASS MEASURED BY BIOIMPEDANCE SPECTROSCOPY AS A NUTRITIONAL MARKER.

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Body Cell Mass (BCM) is a sum of all metabolically active cells of the body. Aim of the study was to compare BCM with other nutritional and inflammatory markers in patients with chronic kidney disease (CKD) stage 4–5 (NKF) without dialysis treatment and in hemodialysis patients (HD). We included 45 adult patients with CKD and eGFR < 30 ml/min not treated with dialysis (26 male, age: 59.7 ± 16.8) and 39 adults treated with HD three times a week, for more than three months (26 male, 5 diabetics, age: 59.8 ± 16). Body composition was measured using multifrequency bioimpedance spectroscopy: Body Composition Monitor - FMC. We used BCM index (BCMI) defined as BCM divided by height to the power of 2. To measure hand grip strength (HGS) we used dynamometer Jamar. In statistics analysis we used Pearson correlations (SPSS v18). *Predialysis group*: BCMI: 7.1 ± 1.6 kg/m², Lean Tissue Index (LTI): 12.9 ± 2.4 kg/m², Fat Tissue Index (FTI): 14.7 ± 5.4 kg/m², BMI: 28.2 ± 5 kg/m², serum creatinine level (Scr): 3.9 ± 2.1 mg/dl, eGFR: 18.3 ± 7.0034 ml/min/1.73 m², albumin (SA): 3.9 ± 0.3 g/dl, prealbumin (PA): 32.8 ± 8.8 mg/dl, CRP: 0.5 ± 0.3 mg/dl. A positive correlation was found with BCMI and HGS (r = 0.55; p = 0.001), PA (r = 0.41; p = 0.004) and Scr (r = 0.37; p = 0.012). A negative correlation was found between BCMI and age (r = -0.48; p = 0.006), CRP (r = -0.33; p = 0.028). We do not observed correlation with BMI and SA. *HD group*: BCMI: 6.4 ± 1.7 kg/m², LTI: 12.1 ± 2.3 kg/m², FTI: 12 ± 6 kg/m², BMI: 24.8 ± 4.8, Scr: 8.9 ± 2.6 mg/dl, TP: 6.7 ± 0.6 g/dl, SA: 3.9 ± 0.47 g/dl, PA 33.8 ± 11.4 g/dl, CRP: 1.1 ± 1.4 mg/dl. A positive, significant correlation was found between BCMI and HGS (r = 0.47; p = 0.003). A negative correlation was found with BCMI and age (r = -0.55; p = 0.0005) and with CRP (r = -0.31), but not statistically significant. We do not observed correlation between BCMI and BMI, Scr, TP, SA, PA, hemodialysis vintage, Kt/V. Assessment of body compartments is important tool in estimation nutritional status in patients with stage IV–V CKD and hemodialysis patients. Analysis of body composition in association with other markers worth to be studied, especially in larger groups of patients.

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211 COMPARISON OF BODY COMPOSITION ACCORDING TO AGE AND GENDER IN PATIENTS WITH CHRONIC KIDNEY DISEASE (CKD).

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The aim of the study was to compare: Body Cell Mass Index (BCMI), Lean Tissue Index (LTI), Fat Tissue Index (FTI) measured by multifrequency bioimpedance spectroscopy (Body Composition Monitor-FMC) according to age and gender in patients with CKD stage 4–5 (NKF) without dialysis treatment and in hemodialysis patients (HD). We included 45 adult patients (pts) with CKD and eGFR < 30 ml/min not treated with dialysis - predialysis group (26 male, age: 59.7 ± 16.8) and 39 adults treated with HD three times a week, for more than three months (26 male, age: 59.8 ± 16.0). We defined BCMI as Body Cell Mass divided by square body height and analogically LTI and FTI (kg/m²). In statistics analysis we used t-student test (SPSS v18).

Predialysis	BCMI	LTI	FTI	BMI
≤ 59 y	8.0 ± 1.6	14.4 ± 2.4	12.5 ± 5.4	27.7 ± 5.5
≥ 60 y	6.4 ± 1.4	11.9 ± 2.0	15.8 ± 5.0	28.5 ± 4.8
Females	6.0 ± 1.2	11.3 ± 1.8	17.2 ± 6.3	28.5 ± 6.1
Male	7.9 ± 1.5	14.2 ± 2.1	12.7 ± 3.5	28.0 ± 4.0

In predialysis pts mean BCMI and LTI were significantly lower in females and older whereas BMI did not differ significantly. Mean FTI was significantly higher in females (for all p < 0.05).

Hemodial.	BCMI	LTI	FTI	BMI
≤ 59 y	7.2 ± 1.7	13.2 ± 2.5	10.3 ± 7.0	24.0 ± 5.3
≥ 60 y	5.8 ± 1.4	11.3 ± 1.9	13.3 ± 4.9	25.4 ± 4.4

Females	6,4 ± 1,4	12,0 ± 1,9	11,5 ± 4,8	24,0 ± 4,4
Males	6,4 ± 1,8	12,2 ± 2,6	12,2 ± 6,6	25,1 ± 5,0

In hemodialysis patients no significant differences was observed in females and males in all BCMI, LTI, FTI and BMI. BCMI, LTI were significantly lower in older pts whereas BMI did not differ significantly (for all p < 0.05). In both groups BCMI and LTI decline in patients over 60 years whereas only in hemodialysis patients they do not differ in females and males. Analysis of body composition in patients with CKD is worth to be studied in large group of patients.

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212 EXAMINATION OF THE EFFECTS OF LIRAGLUTIDE ON DIABETIC NEPHROPATHY

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Liraglutide (Lira), a glucagon-like peptide-1 receptor agonist, can be administered to diabetic patients with renal failure without dose reduction, but experience with the use of Lira in these patients is limited. This study was designed to examine the effects of 6-month Lira administration on glucose metabolism, body mass index (BMI), and renal function in 18 patients with diabetic nephropathy (eGFR < 60 ml/min).

The study included 18 patients with diabetic nephropathy who were on insulin/oral hypoglycemic medications (6 men, 12 women; average age, 60 years; HbA1c, 8.4%; BMI, 29.4 ± 8.2; duration of diabetes, 12 years; eGFR, 55.2 ± 6.3 ml/min/1.73 m²). Lira was given either in combination or as monotherapy. After 6 months of Lira treatment, changes in HbA1c levels, casual blood glucose levels, BMI, and eGFR were examined.

The average HbA1c and casual blood glucose levels were significantly decreased after 6-month Lira administration (HbA1c before administration 8.4%, 7.9% at Month 1, 7.4% at Month 2, 7.1% at Month 3, 7.1% at Month 6; p < 0.01 respectively, Paired T test). There were, however, no significant changes in renal function.

In conclusion, these results suggest that the administration of Lira in patients with diabetic nephropathy may improve glucose metabolism and reduce BMI without affecting renal function or albuminuria in the short term.

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213 EFFECTS OF HEMODIALYSIS ON SERUM FETUIN-A LEVELS

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Fetuin-A is a calcification inhibitor, negative acute phase response marker and cardiovascular mortality predictor in hemodialysis patients. Low levels of fetuin-A are associated with malnutrition, inflammation, decreased bone mass density, low-turnover bone and use of high calcium concentration dialysate. Hemodialysis procedure (HD) has been shown to decrease fetuin-A levels by 20%, probably due to HD-induced inflammation or acute changes in calcium metabolism. The aim of our study was to investigate effects of HD on serum fetuin-A levels. Forty clinically and hemodynamically stable hemodialysis patients (21 females, 68 (38–85) years) underwent routine bicarbonate hemodialysis or hemodiafiltration with polysulfone dialyzer. On consecutive HD dialysis solution with different calcium concentration with/without citric acid was used to assess influence of calcium shifts and parathyroid activity on fetuin-A changes during HD. All other parameters of HD were kept constant. Serum fetuin-A, calcium, phosphorus, iPTH, CRP and other biochemical parameters were measured before and after each HD. Our data show that predialysis serum fetuin-A levels have positive correlation with iPTH levels (p < 0.05) and