THE BODY COMPOSITION CORRELATES WITH THE QUALITY OF LIFE AND THE COGNITIVE STATUS IN PATIENTS WITH CHRONIC RENAL FAILURE

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Introduction and objectives

Recent studies demonstrated that the body composition, hydration status and muscular mass, are correlated with poor outcomes and quality of life in elderly [1,2]. Dehydration is also a strong risk factor for dementia [3,4]. Patients with chronic renal failure from early-stage disease have a reduced quality of life [5,6] and cognitive impairment that gets worse with the advanced disease [7,8].
Aim of our study was to investigate the correlation among the body composition, the quality of life and the cognitive status in patients with chronic renal failure.

Methods

We enrolled 15 patients with stage 3-4 KDOQI chronic renal failure. Patients underwent bioimpedentiometry (BIA) and the following tests: Kidney Disease Quality of Life Short Form (KDQOL-SF 1.3) to assess the quality of life, Mini-Mental State Exam (MMSE) and Montreal Cognitive Assessment (MoCA) to assess the cognitive status. We correlated the BIA data with the results of the tests by linear correlation. Data are presented as mean and standard deviation.

Results and Conclusions

There was a statistical significant correlation between extracellular volume (ECW %, p=0.04), intracellular volume (ICW l, p=0.04), extracellular volume and intracellular volume ratio (E/I, p=0.01), lean tissue index (LTI kg/m2, p=0.04), lean tissue max (LTM kg, p=0.04 e LTM%, p=0.04), body cell mass (BCM kg, p=0.04) and MMSE (figure 1, table 1); between ECW% and symptom/problem list (p=0.04), effects of kidney disease (p=0.01) and sleep (p=0.02), between total body water (TBW l) and physical Health Composite (p=0.01) and cognitive function (p=0.01), between ECW l (p=0.04), ICW l (p=0.02), LTM kg and physical functioning (p=0.01) (figure 2, table 2).

Our results suggest that the body composition and the water distribution into body and lean max, could influence the quality of life and the cognitive function in chronic renal failure patients. So, a regular monitoring of the body composition by BIA, of the cognitive status by MMSE and MoCA test and of the quality of life by KDQOL-SF would be desirable.

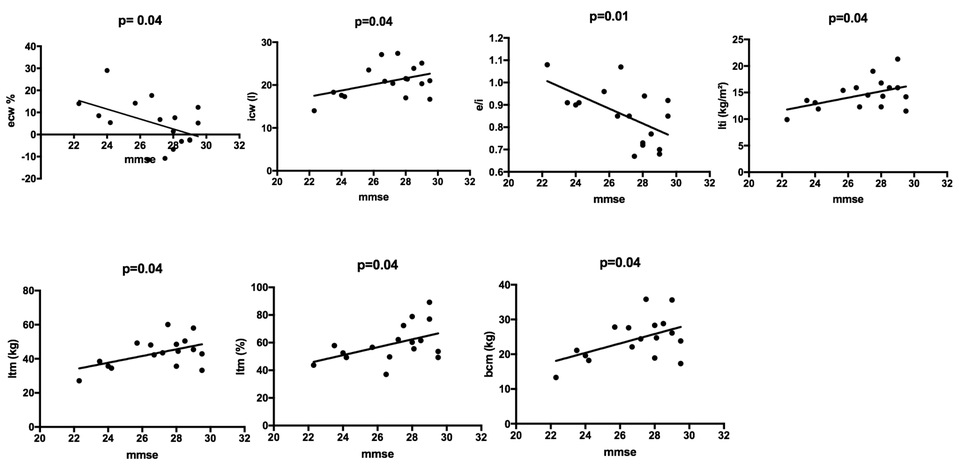

Figure 1: correlation between BIA and MMSE

		ECW%	ICW(l)	e/i	LTI (kg/m2)	LTM (kg)	LTM (%)	BCM (kg)
		4±10	21±3	0.8±0.1	14±2	44±8	59±13	24±6
MMSE	26±2	P=0.04	P=0.04	P=0.01	P=0.04	P=0.04	P=0.04	P=0.04

Table 1: correlation between BIA and MMSE

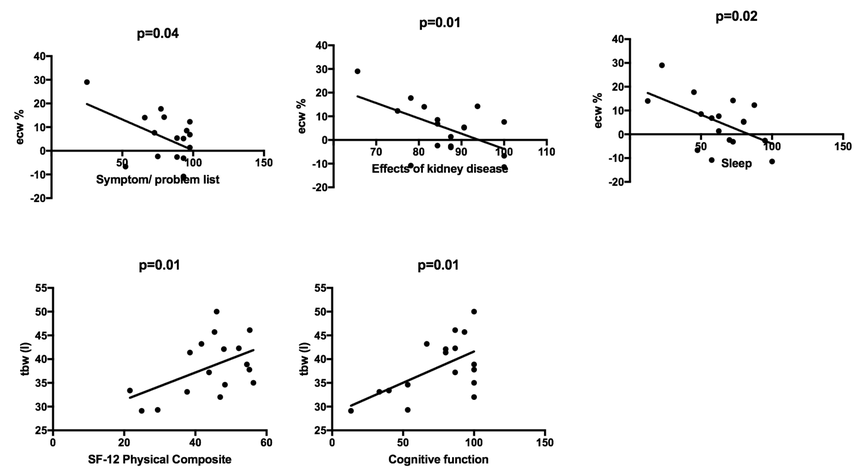

Figure 2: correlation between BIA and KDQOL-SF 1.3

		SYMTOM/ PROBLEM	EFFECT OF KIDNEY DISEASE	BURDEN OF KIDNEY DISEASE	SF-12 MENTAL HEALTH COMPOSITE	SF-12 PHYSICAL HEALTH COMPOSITE
		81.5±19.4	86.4±9.3	61±28.7	42±11	43.8±10.5
ECW%	4±10	P=0.04	P=0.01	P>0.05	P=0.03	P>0.05
TBW L	38±6	P>0.05	P>0.05	P>0.05	P>0.05*	P=0.01
LTM kg	44±8.6	P>0.05	P>0.05	P>0.05	P>0.05	P>0.05**

*: p=0.01 only considering cognitive function
**: p=0.01 only considering physical function

Table 2: correlation between BIA and KDQOL-SF 1.3

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