

Is the Nutritional Status of Haemodialysis and Peritoneal patients different?

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Background

- Renal Replacement therapy (RRT) patients experience higher nutritional derangements compared to general population due to decreased intake, increased protein losses and catabolism.
- Clinical assessment together with biochemical parameters and bioimpedance analysis (BIA) provide a reliable assessment of fluid and nutritional status.

Aims

To investigate the difference of nutritional status presented by HD and PD patients.

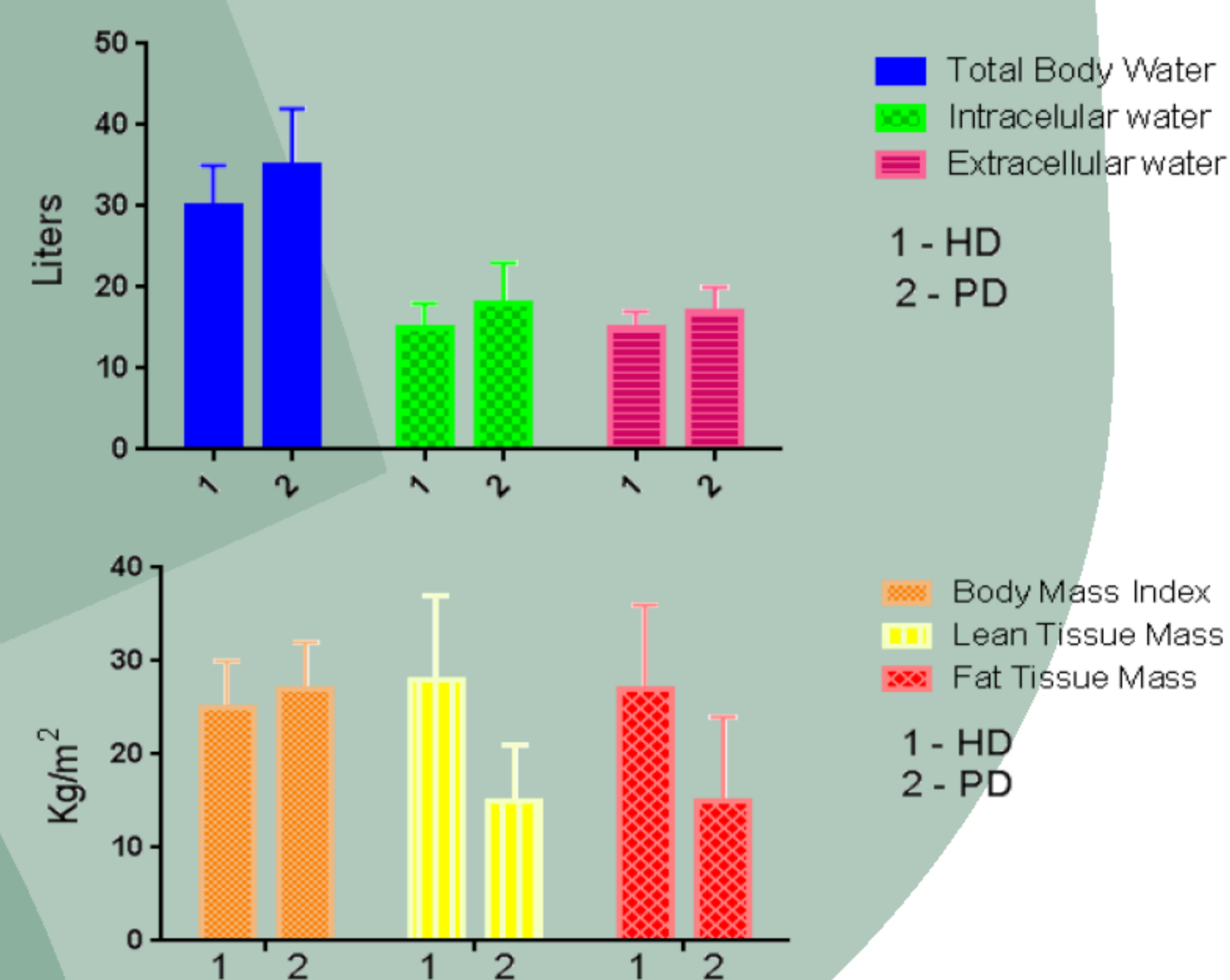
Population and Methods

Retrospective, non-interventional, observational, unicentre study of 60 Chronic Kidney Disease (CKD) stage 5d patients in RRT

- Nutritional status was assessed through analysis of Body Mass Index (BMI), Serum albumin, creatinine, C - reactive protein (CRP) and Body Composition Monitor (BCM)
- Being **well-nourished** was established by intracellular water/dry body weight (ICW/BW) ratio already used for patients on HD¹

Results

Variable	HD	PD	p value
Sample size (n° of patients)	37 (62%)	23 (38%)	-
Male gender (n ; %)	20/37 (54%)	15/23 (66%)	-
Age (range and median)	71 ± 11	52 ± 13	< 0.01
Dialysis vintage (median - months)	35	18	0.05
Diabetes Mellitus (n ; %)	14 (37,8%)	7 (30,4%)	0.56
Serum Albumin (median ± SD - g/dL)	3.3 ± 0.6	3.2 ± 0.6	0.68
C-reactive Protein (median ± SD - g/dL)	1	1.7	0.012



Variable	p value
TBW	0.04
ICW	0.05
ECW	0.05
BMI	0.257
LTM	< 0.01
FTM	< 0.01

Variable	HD		PD		P value	
	Correlation (r)	P value	Correlation (r)	P value		
LMT and SCr	0.409	Positive	0.012	∅	0.957	
ICW/BW and LTM	0.783	Positive	< 0.001	∅	0.102	
ICW/BW and FTM	- 0.830	Negative	< 0.001	- 0.703	Negative	< 0.01
ICW/BW and BMI	- 0.526	Negative	< 0.001	- 0.547	Negative	< 0.01
ICW/BW and age	- 0.345	Negative	0.037	- 0.465	Negative	0.025

Discussion

HD patients	DP patients
<ul style="list-style-type: none"> Higher Serum C-Reactive Protein and Lean Tissue Mass Strong positive correlation between Lean Tissue Mass and Serum Creatinin. 	<ul style="list-style-type: none"> Younger patients More intracellular water (ICW) Less Lean and Fat Tissue Mass Less % of diabetic patients

Despite intracellular water is associated with a better nutritional status and the intracellular water/dry body weight ratio is mildly superior in DP patients these show less lean tissue mass.

Conclusion

Based on ICW/BW ratio, it seems DP patients are better nourished despite having less lean tissue mass.

- Low protein intake vs high protein losses into the dialysate?
- Hypervolemia seem to be related with higher CRP → Is there any relation between inflammatory parameters and lean tissue mass in DP patients?
- (ICW/BW) ratio seems not to be adequate to evaluate malnutrition in DP patients.

¹Garagarza C. et al, Nefrologia 2013; 33 (5): 667