

# CLINICAL PARAMETERS AND SURVIVAL IN HEMODIALYSIS PATIENTS WITH LOW BODY CELL MASS INDEX

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## 1. Introduction and Aim

- Hemodialysis (HD) patients with protein-energy wasting frequently present increased inflammatory parameters which are associated to higher mortality. The Body Cell Mass (BCM) is a useful nutritional marker and is not affected by changes in the hydration status which commonly occur in these patients.
- The aim of this study was to investigate the association between nutritional and inflammatory parameters with BCM as well as its relationship with long-term survival in maintenance HD patients.

## 2. Methods

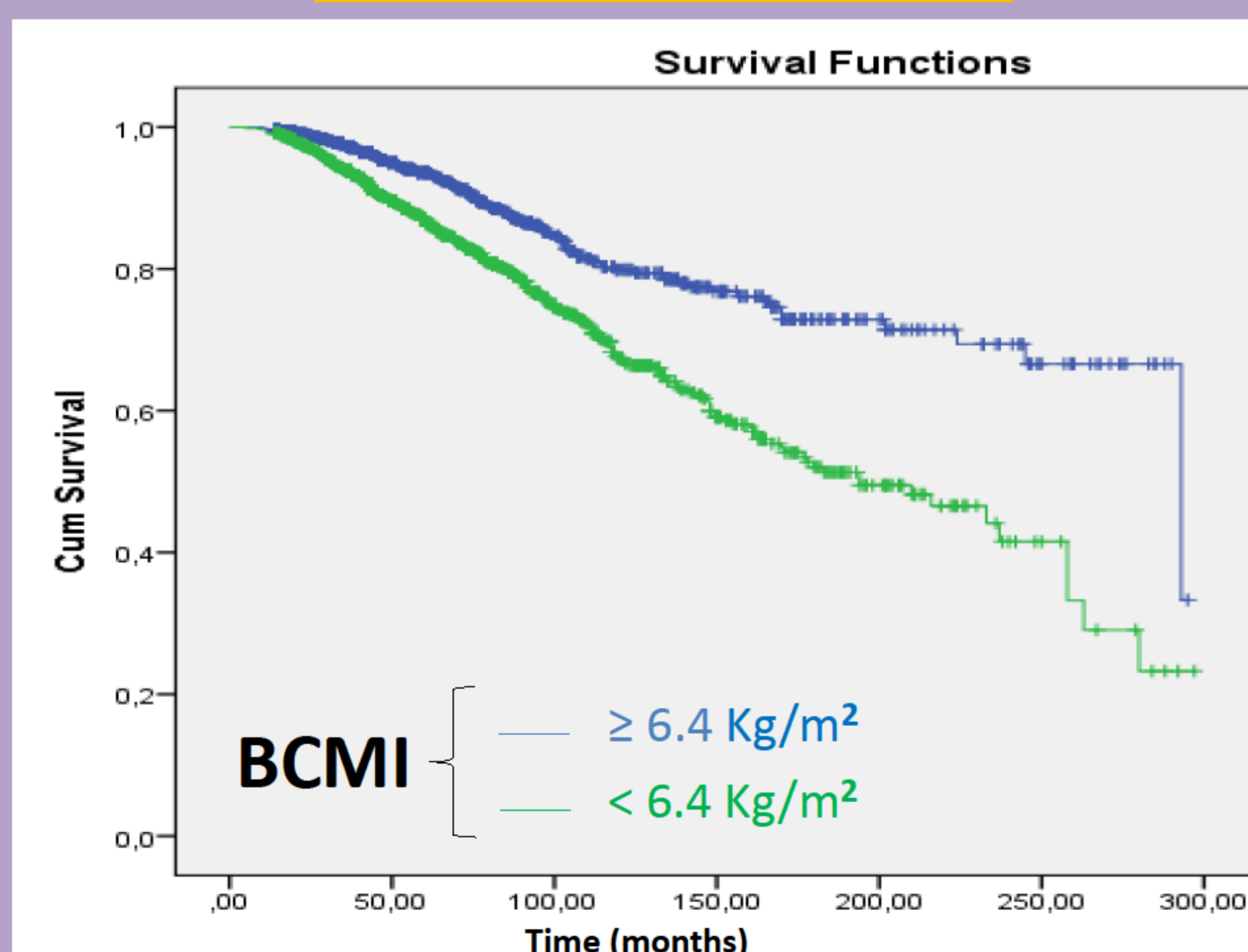
- This was a prospective longitudinal multicenter study with 3758 patients on maintenance HD.
- Clinical parameters were measured and overhydration (OH/ECW) and body cell mass (BCM) were assessed with a body composition monitor (BCM<sup>®</sup>). Body cell mass was converted to Body Cell Mass Index (BCM/height<sup>2</sup>).
- Considering Body Cell Mass Index (BCMI) mean value, we split our study population into 2 groups.
- All statistical tests were performed using SPSS 20.0 software. A P value less than 0.05 was considered statistically significant.

## 3. Results

Baseline patients' characteristics	
N	3758
Age (years)*	69.8±14.6
Female (%)	42.8
Diabetics (%)	30.8
HD vintage (months)*	76.6±60.3
BCMI (Kg/m <sup>2</sup> )*	6.4±2.1

Values expressed as mean ± SD;  
 BCMI: Body Cell Mass Index.

### Body Cell Mass Index (P<0,001)



BCMI: Body Cell Mass Index.

### 2 GROUPS OF PATIENTS

	BCMI < 6.4Kg/m <sup>2</sup>	BCMI ≥ 6.4Kg/m <sup>2</sup>	P
N	1365	1160	-
Age (years)	74.1±12.7	65.1±15.4	<0.001
URR (%)	82.1±6.0	78.5±5.8	<0.001
Kt/V	1.80±0.4	1.6±0.3	<0.001
TC (mg/dL)	186.8±45.5	182.6±43.7	0.049
HDL-C (mg/dL)	53.1±16.6	49.4±15.3	<0.001
OH/ECW (%)	9.1±7.8	6.1±8.6	<0.001
nPCR (g/kg/day)	1.1±0.3	1.2±0.3	<0.001
Albumin (g/dl)	3.9±0.4	4.1±0.4	<0.001
PTH (ng/l)	337.8±332.3	387.2±346.1	<0.001
Hemoglobin (g/dl)	11.5±1.3	11.6±1.3	0.009
Potassium (mEq/L)	5.1±0.8	5.3±0.8	<0.001
Phosphorus (mg/dl)	4.0±1.3	4.5±1.3	<0.001

BCMI: Body Cell Mass Index; URR: Urea Reduction Ratio; Kt/V – dialysis adequacy; TC: Total Cholesterol; HDL-C: HDL Cholesterol; OH/ECW: Overhydration; nPCR: Normalized protein catabolic rate; PTH – parathyroid hormone.

## 4. Conclusion

Monitoring BCMI could be of interest to detect hemodialysis patients at nutritional risk and to predict these patients prognosis.

Our data support the use of BCMI for clinical assessment of HD patients.

