

LEAN TISSUE INDEX IS A BETTER RISK MARKER THAN FAT TISSUE INDEX IN HAEMODIALYSIS PATIENTS

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INTRODUCTION

Unlike general population, a high body-mass index (BMI) is considered a protective factor for patients in hemodialysis (HD). But BMI is an anthropometric parameter which doesn't allow distinguishing between patient's lean tissue, fat tissue or total body water.

Aim: To prove that the protection related to BMI higher than 25 Kg/m² is due to the presence of high body lean mass.

PATIENTS AND METHODS

Clinical, analytical and spectroscopic bioimpedance (BIS) data was collected in 1887 incident patients. A survival study (Kaplan Meier curve) according to body-mass index was carried out. The patients were grouped according to BMI > or < 25 Kg/m².

We selected patients with BMI >25 Kg/m² and we subgrouped them by LTI lower or higher than the 10th percentile. We performed a logistic regression analysis to obtain propensity scores for LTI lower or higher than percentile 10 using the following covariates: age, sex, diabetes mellitus, vascular access, FTI and Charlson comorbidity index. After propensity score matching, 270 patients (145 in each group) remained.

RESULTS

Survival is greater for patients with BMI higher than 25 Kg/m² in comparison to those with lesser BMI (Figure 1).

Patients with BMI > 25 Kg/m² were selected and matched by age, gender, diabetes mellitus, vascular access, fat tissue index (FTI) and Charlson index. After the propensity score matching, the group with LTI lower 10th percentile had a worst survival rate, even for those patients with FTI higher 90th percentile (Figure 2).

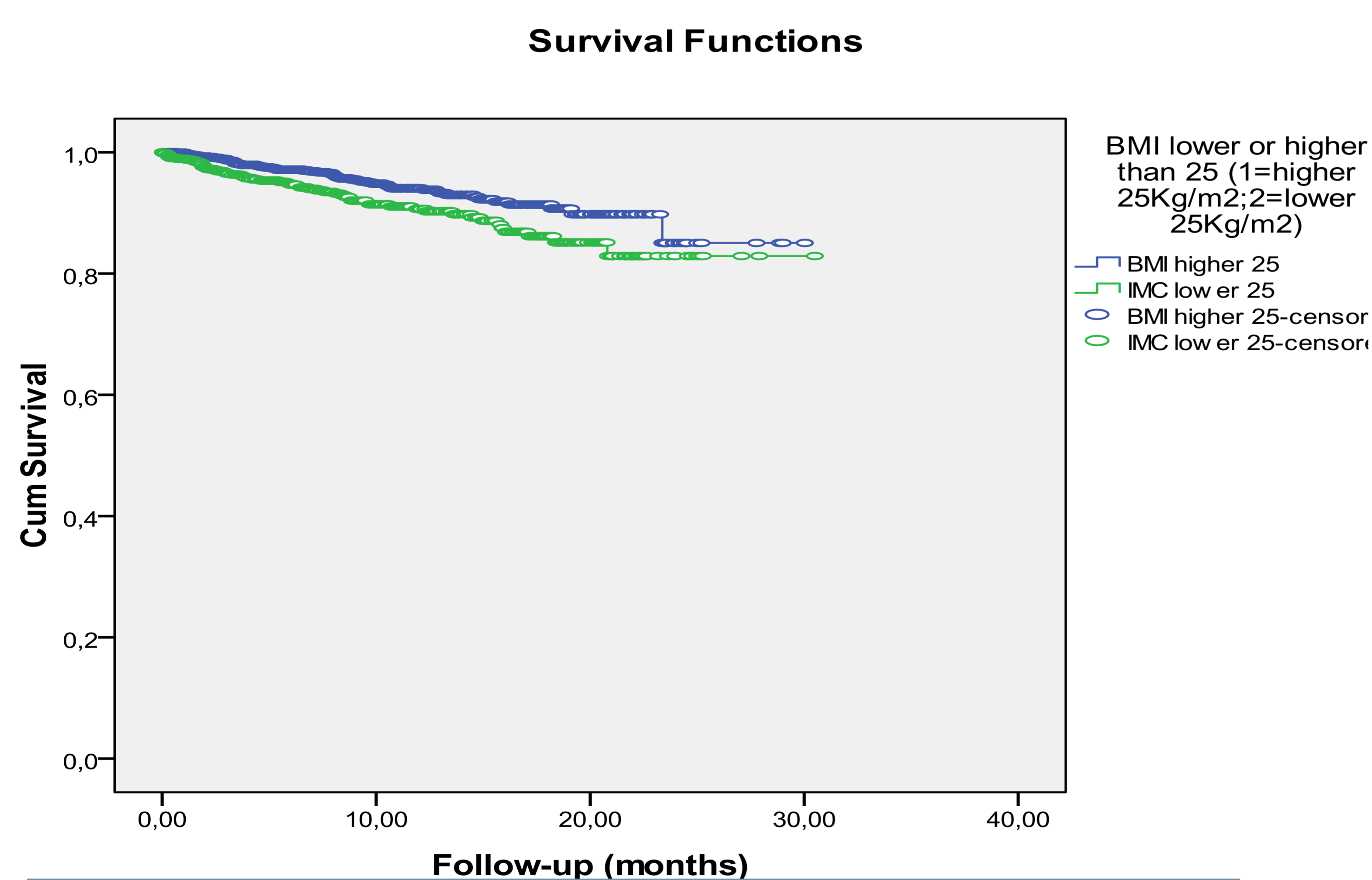


Figure 1| Survival curves of hemodialysis patients based on BMI > or < 25 Kg/m² (LogRank=0.006). The total cohort was divided into two groups based on BMI higher (N=1220 patients) or lower (N=667 patients) than 25 Kg/m².

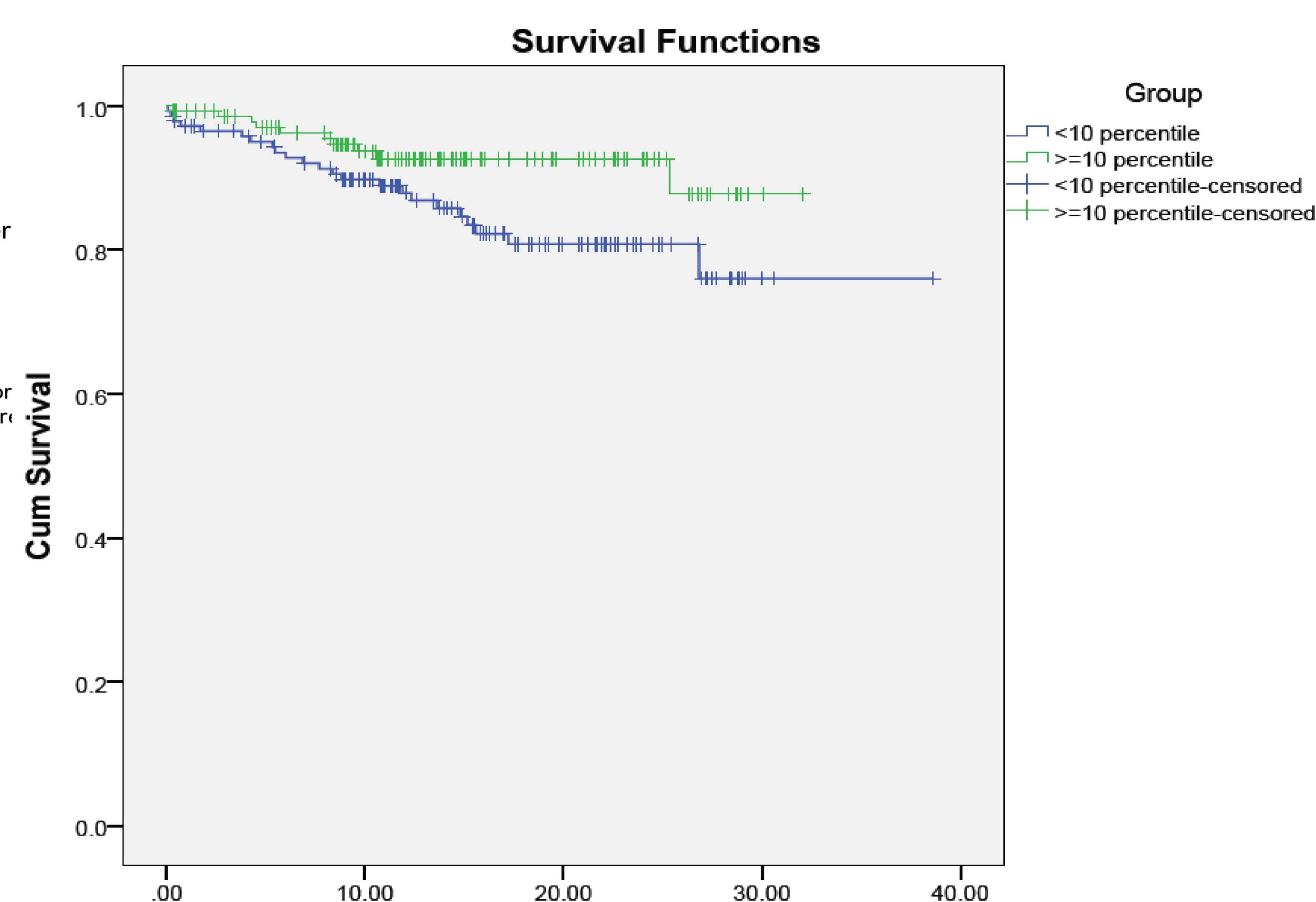


Figure 2| Survival curves of hemodialysis matched patients based on LTI > or < 10th percentile (LogRank=0.036).

CONCLUSIONS

- The patients with BMI >25 Kg/m² and LTI higher than 10th percentile had better survival than those patients with BMI >25 Kg/m² and LTI lower than 10th percentile WITH the same percentile of FTI (FTI higher 90th percentile or lower 10th percentile or FTI between 10th and 90th percentiles).
- So, the BMI should be broken down into its compartments (fat, lean and water) in order to identify HD risk factors such as overhydration or low lean mass.

