

Relationship between pre-transplant body composition and renal post-transplant evolution

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Introduction

An existing relationship between body composition and morbidity and mortality in dialysis patients has been described. Assessing body composition of dialysis patients is increasingly common in dialysis units; however, there are no studies to show whether body composition is related to renal transplant evolution and the incidence of post-transplant complications.

Objective

Our goal was to determine whether there is a relationship between the pre-transplant BC and transplantation evolution in terms of renal function (RF) and complications.

Methods

Retrospective descriptive study. The following parameters were collected: body composition parameters (pre-transplant bioimpedance), renal function evolution, and complications (surgical, urological, immunological, infectious) during the first year after transplantation.

Conclusions

In dialysis patients, the pre-transplant body composition is related to the incidence of wound dehiscence and the presence of infections within the first month after transplantation.

Additionally, LTI values are related to creatinine level at 6 and 12 months after transplantation.

It therefore appears that the bioimpedance could be helpful predicting post-transplant complications, anticipating its appearance.

Results

General and body composition parameters of all patients are summarized in **Table 1**.

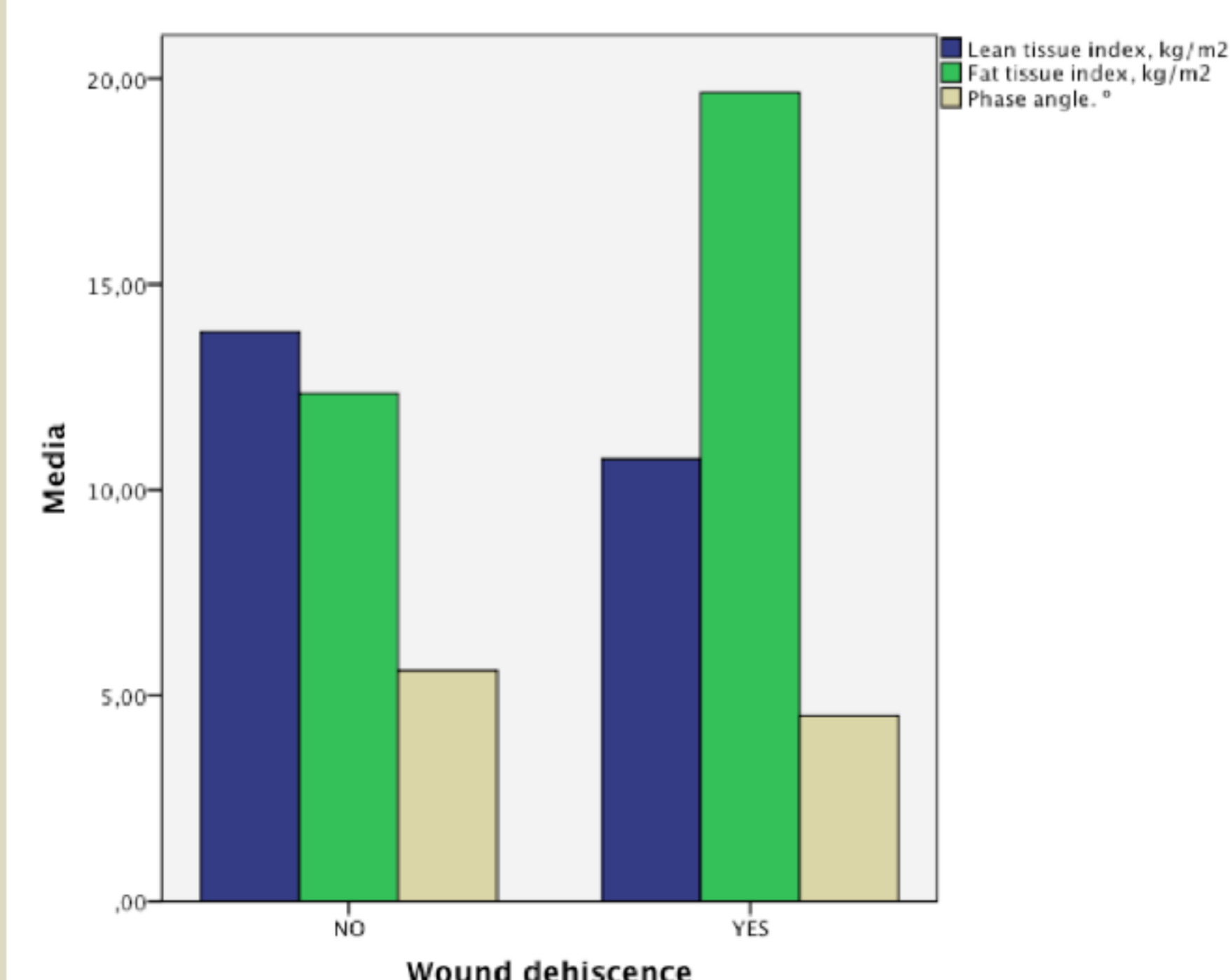
Table 1. General and body composition parameters of 46 kidney transplant receptors.

All patients n=46	
General characteristics	
Age, years	50 ± 14
Male, n, %	30 (65%)
Dialysis vintage, months	19 (11 to 33)
Asystolia donors, n, %	27 (59%)
Donor's age, years	48 ± 14
HLA mismatch, n	5 (4 to 5)
Pre-transplant Body composition parameters	
BMI, kg/m ²	26.4 ± 4.9
LTI, kg/m ²	13.5 ± 2.9
FTI, kg/m ²	13.1 ± 6.3
Phase angle, °	5.5 ± 1.1

BMI: body mass index, LTI: lean tissue index, FTI: fat tissue index.

Analyzing the relation between BC and post-transplant complications, we observed that higher incidence of wound dehiscence was significantly associated with higher values of FTI ($p = 0.013$), lower values of LTI ($p = 0.001$) and lower phase angle ($p = 0.034$). **Figure 1**.

Figure 1. Main body composition parameters according to the presence of wound dehiscence



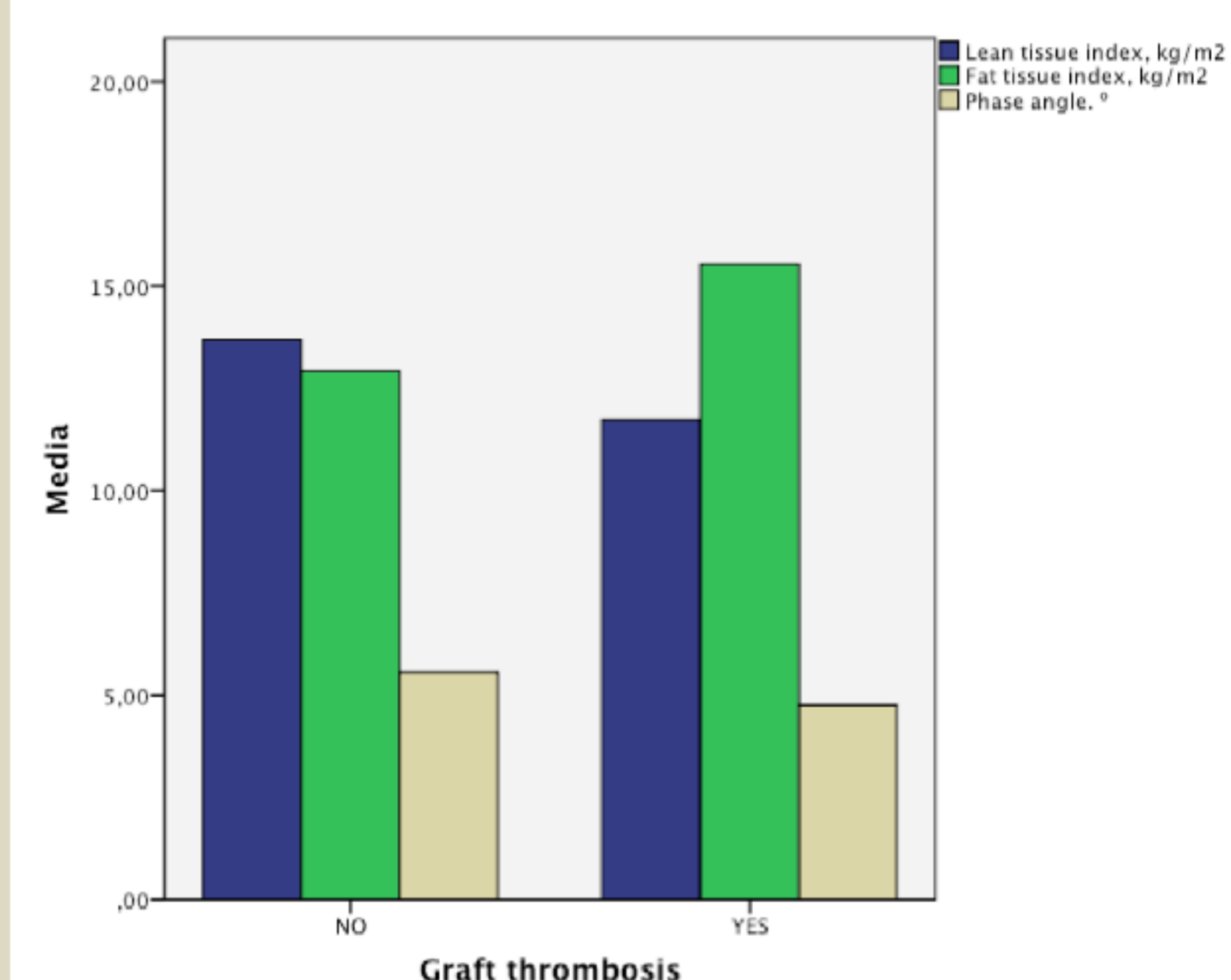
We found no correlation between body composition and delayed graft function, number of haemodialysis sessions needed or number of days of hospitalization.

Additionally, a non significant trend was found between higher values of FTI and higher rate of infections presented during the first after transplantation ($p = 0.06$)

There was no correlation between BC and the presence of collections, ureteral stenosis or stenosis of the renal artery, nor with the incidence of rejection.

Furthermore, patients ($n=23$) with phase angle <5.5 had a higher incidence of graft thrombosis ($p=0.037$). In **figure 2** the relationship between graft thrombosis and and FTI, LTI and phase angle is shown.

Figure 2. Main body composition parameters according to the development of graft thrombosis



Regarding renal function, we found a direct relationship between LTI and serum creatinine monitoring at 6 ($P = 0.002$) and 12 months ($p = 0.015$), without being it related to the degree of proteinuria. **Figure 3**

Figure 3. Correlation between lean tissue index and serum creatinine at 6 and 12 months after kidney transplantation.

