A SINGLE PHYSICAL FUNCTIONING SCORE PREDICTS MORTALITY IN HEMODIALYSIS PATIENTS. A 10-YEAR PROSPECTIVE STUDY

Giorgos K. Sakkas[1], Christoforos Giannaki[2], Christina Karatzaferi[1], Ioannis Stefanidis[3],

[1]University of Thessaly, PE and Sport Science, Trikala, GREECE, [2]University of Nicosia, Health Science, Nicosia, CYPRUS, [3]University of Thessaly, Medicine, Larissa, GREECE.

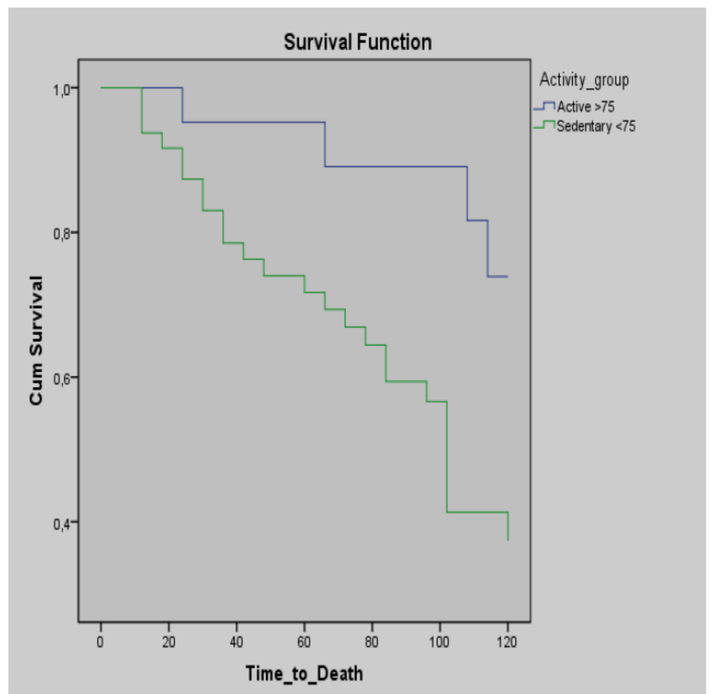
INTRODUCTION - AIMS

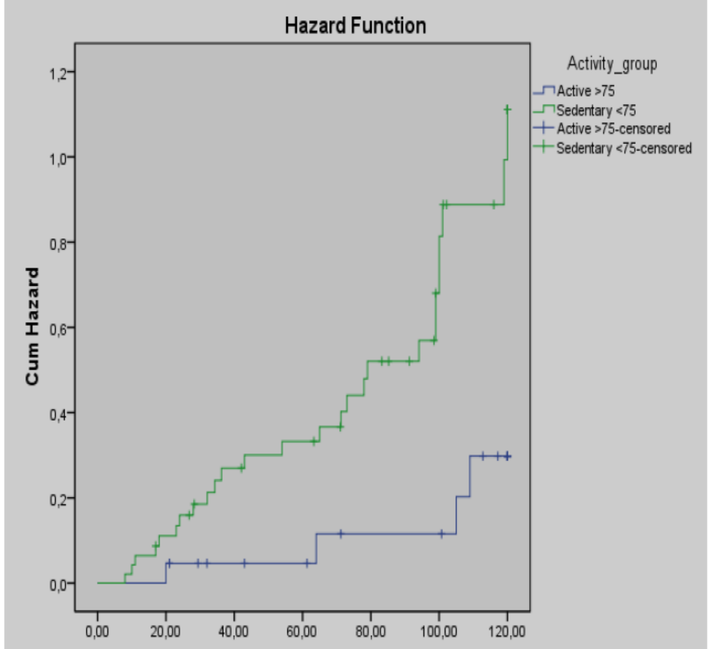
The number of individuals with end-stage renal disease (ESRD) has been growing dramatically at a rate of 7% per year and exceeded 200 million in 2011 worldwide. Of these, over 80% receive hemodialysis (HD) as their major treatment[1]. The increased prevalence of HD treatment leads to an enormous financial burden not only due to the high cost of HD *per se* but also due to the low functionality of these patients which leads to low employment rates and high reliance on disability benefits. Previous data showed that patients displaying relatively high levels of physical fitness have lower hospitalization rates and are prescribed less medication. However, very few prospective mortality studies have been conducted on this topic, mainly because of the tedious procedures required to assess physical capacity in everyday clinical practice. **Aims: To detect potential associations between physical capacity aspects and mortality in patients receiving HD therapy for the last 10 years using a practical assessment method.**

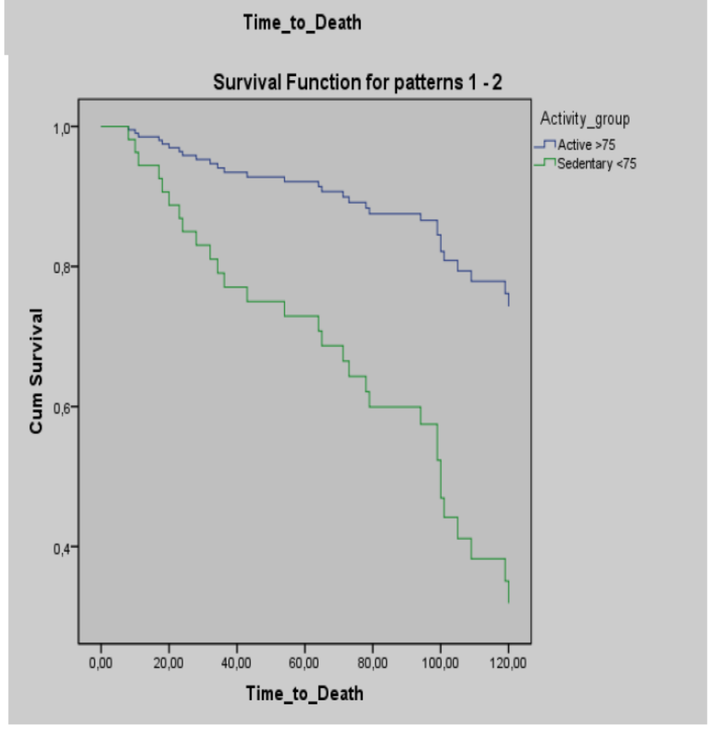
METHODS

Survival status was determined in 70 ESRD patients for 10 years in this prospective mortality study. Collected data included quality of life (both mental and physical) using the SF36 questionnaire, insulin resistance (OGTT), body composition (DEXA), sleep quality (PSG), abdominal obesity (CT), muscle composition (CT), and functional capacity (via a battery of tests). Differences between survivors and non survivors were evaluated by the chi-squared test for categorical data, the t-test for normally distributed quantitative data, and the Wilcoxon two-sample test for data non-normally distributed data. Survival curves were estimated by the Kaplan–Meier method and evaluated by the log-rank test, while a minimal model of factors related to mortality was developed by Cox multiple regression.

GRAPHS







RESULTS

During a median 88-month follow-up, 30 patients (43%) died. Mortality was independently predicted by a series of non-modifiable factors including age, years in HD, waist to hip ratio, functional capacity, albumin, and HbA1c, as well as different modifiable factors including percentage thigh muscle to percentage thigh intramuscular fat ratio, vitality, physical-related health and depression scores ($p<0.001$). Since all modifiable factors were linked with functional capacity, the sample was divided using the 75th percentile of the physical component summary (PCS) from the SF36 as a cutoff. Patients in the two sub-groups (i.e., above and below the 75th percentile) demonstrated significant differences in factors related to mortality including quality of life (both mental and physical), functional capacity, thigh muscle cross-sectional area, total lean body mass, insulin resistance index, and % liver fat ($p<0.05$). Moreover, Cox regression analysis showed that the PCS-SF36 75th percentile cutoff predicted the 10-year mortality (hazard ratio 0.26, [0.09-0.74]; $p=0.004$).

CONCLUSIONS

Our results demonstrate that, at any given time point, mortality in our HD patients displaying increased functional capacity (as measured by the PCS SF36) is reduced by 74%. Furthermore, the mortality hazard for patients who displayed increased functional capacity for 10 years is reduced by 99.9%. Assessment of functional capacity via the PCS SF36 in HD patients should be conducted in everyday clinical practice to improve long term survival of hemodialysis patients.

REFERENCES:

1. Whaley-Connell AT1, Vassalotti JA, Collins AJ, Chen SC, McCullough PA. National Kidney Foundation's Kidney Early Evaluation Program (KEEP) annual data report 2011: executive summary. Am J Kidney Dis. 2012 Mar;59(3 Suppl 2):S1-4. doi: 10.1053/j.ajkd.2011.11.018

52 ERA
438--SP
J7) Chronic Kidney Disease. Rehabilitation.
Giorgos Sakkas
DOI: 10.3252/pso.eu.52era.2015
ePosters supported by F. Hoffmann- La Roche Ltd.
52 ERA EDTA CONGRESS London 2015 UNITED KINGDOM MAY 28TH - 31ST
PosterSessionOnline.com