

DIALYSIS. PROTEIN-ENERGY WASTING, INFLAMMATION AND OXIDATIVE STRESS

FP779

MUSCLE FUNCTION AS PREDICTOR OF MORTALITY IN MAINTENANCE HEMODIALYSIS PATIENTS

Barbara P Vogt¹, Mariana CC Borges¹, Pasqual Barretti¹ and Jacqueline CT Caramori¹

¹UNESP, Internal Medicine, Botucatu, Brazil

Introduction and Aims: Muscle wasting is a strong predictor of mortality in hemodialysis patients. Besides muscle size, muscle function also may be a predictor of mortality. Thus, the purpose of this study was to assess if muscle function is associated with mortality in maintenance hemodialysis patients.

Methods: This observational study included prevalent hemodialysis patients between July 2012 and August 2014. To assess the muscle function, it was used a Jamar® handgrip strength. Patients were followed until October 2014 and they were censored if they were switched offdialysis, underwent renal transplantation, or were transferred to another facility. ROC curves were used to determine a cutoff point of handgrip strength

that predicts mortality in both genders. Kaplan-Meier method was used to calculate cumulative survival probabilities, and the difference between survival curves was assessed by the log rank test. Handgrip strength values were divided into quintiles and used in Cox proportional hazard analysis to evaluate if they are independent predictors of survival.

Results: Two hundred and eighteen patients followed for 404 ± 233 days, mean age was 58.3 ± 14.6 years and mean body mass index 26 ± 6 kg/m²; 56.9% were men and patients had been on dialysis for 16,4 (1 - 304) months. Thirty deaths (13.8%) occurred during the follow-up period, 19 received kidney transplants (8.7%) and 4 patients were transferred to another facility (1.8%). According to ROC curves, the cutoff point of handgrip strength that predicts mortality for men was 22.5 kg (AUC 0.728; CI 95% 0.591-0.864; $p < 0.01$; sensitivity 85.7% and specificity 59.1%) and for women was 9 kg (AUC 0.657, CI 95% 0.495-0.819; $p = 0.049$; sensitivity 56.2% and specificity 75.6%). Using these cutoff points, we fitted two Kaplan-Meier curves that showed that the groups with lower handgrip strength had a significant lower cumulative survival (men $p < 0.01$; women $p = 0.01$). Two models were fitted using multivariate Cox proportional hazards analysis, each one for each gender. For men, only the fifth quintile showed significant decreased risk of mortality (HR 0.16; CI 95% 0.029-0.877; $p = 0.035$). Whereas for women, only the second quintile had a significant difference for decreased risk of mortality (HR 0.17; CI 95% 0.036 - 0.769; $p = 0.02$).

Conclusions: The cutoffs of handgrip strength for men and women found were 22.5 kg and 9 kg, respectively. They were useful to predict mortality in prevalent maintenance hemodialysis patients, independent of gender.