LOW FT3 AMPLIFIES THE RISK BY HYPERFIBRINOGENEMIA FOR ALL CAUSE AND CARDIOVASCULAR MORTALITY IN ESKD PATIENTS ON DIALYSIS

Claudia Torino, Graziella D'Arrigo, Maurizio Postorino, Giovanni Tripepi, Francesca Mallamaci, Carmine Zoccali on behalf of PROGREDIRE Work Group

CNR-IFC/IBIM & Nephrology and Renal Transplantation Unit, Reggio Calabria, Italy

INTRODUCTION

Low free triiodothyronine (fT3), largely an epiphenomenon of inflammation and protein-energy wasting, is a strong predictor of mortality in end-stage kidney disease (ESKD) (1). Fibrinogen is a marker of inflammation and a key molecule transducing the effect of inflammation on the coagulation cascade (2). We hypothesized that the risk associated with low fT3 in ESKD can be modified by fibrinogen levels in these patients.

METHODS

We tested this hypothesis in a cohort of 854 dialysis patients with a 2.7 years follow-up.

fT3 and fibrinogen measurements were made at baseline using standard methods in the routine clinical laboratory.

Patients were followed up for a median time of 2.7 years (inter-quartile range: 1.8-2.9).

RESULTS

During the median follow-up of 2.7 years, 261 patients died, 138 of whom of cardiovascular (CV) causes. The risk of low fT3 levels for all-cause and CV death was strongly modified by fibrinogen levels. In fully adjusted Cox models (including age, gender, smoking, diabetes, cholesterol, systolic blood pressure, CV comorbidities, hemoglobin, phosphate and dialysis vintage), the hazard ratios (HR) associated to low fT3 levels for the study outcomes were lowest in patients in the 1st fibrinogen quartile [all-cause death: HR: 2.3 (95% CI: 1.3-4.0, P=0.004); CV death: HR: 2.5 (1.2-5.2), P=0.014], intermediate in the 2nd and 3rd quartile [2nd quartile - all-cause death: HR: 3.2 (1.4-7.3, P=0.006); CV death: HR: 3.7 (1.3-10.1, P=0.015); 3rd quartile - all-cause death: HR: 4.5 (1.5-13.4, P=0.007); CV death: HR: 5.5 (1.4-21.6, P=0.015)] and highest in the 4th quartile [all-cause death: HR: 6.3 (1.6-24.6), P=0.008; CV death: HR: 8.1 (CI: 1.5-44.5), P=0.016] (Fig 1 and 2).

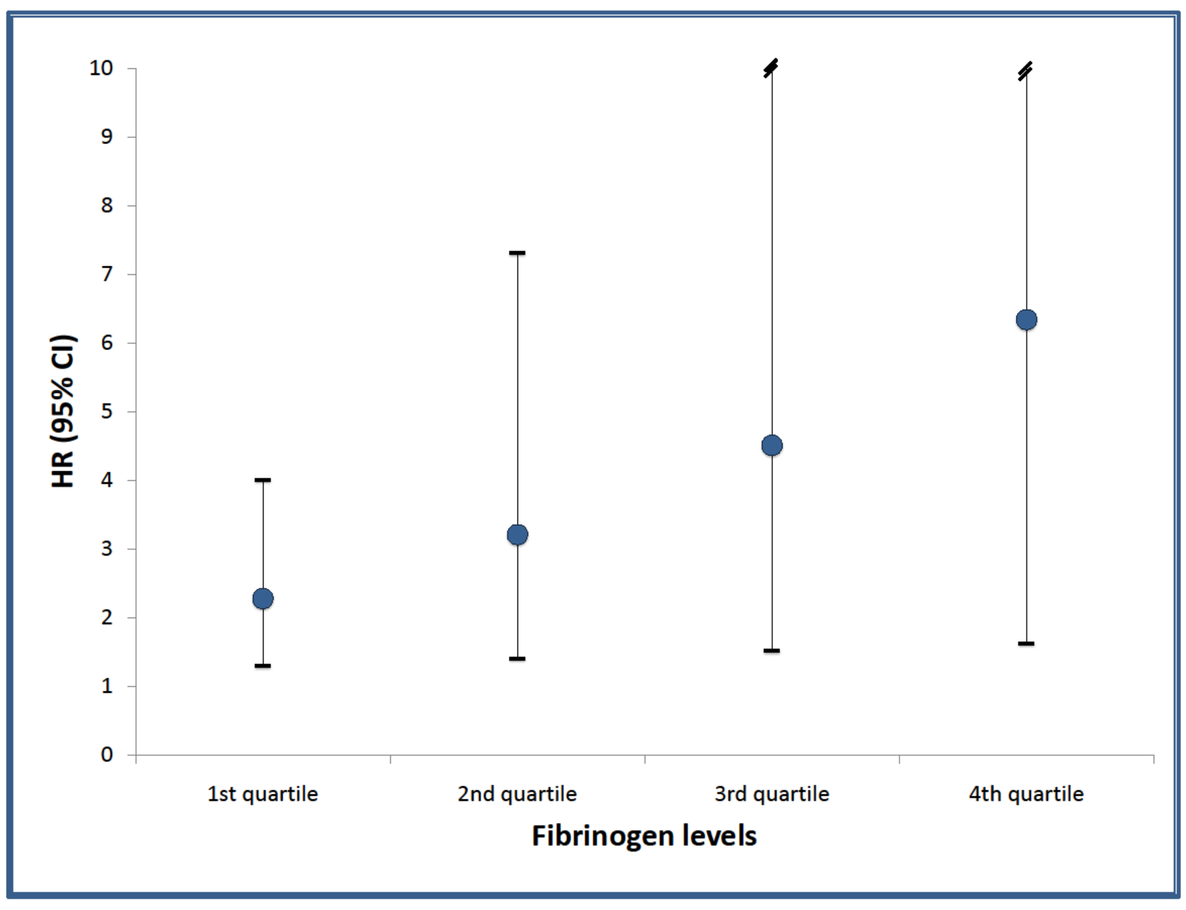
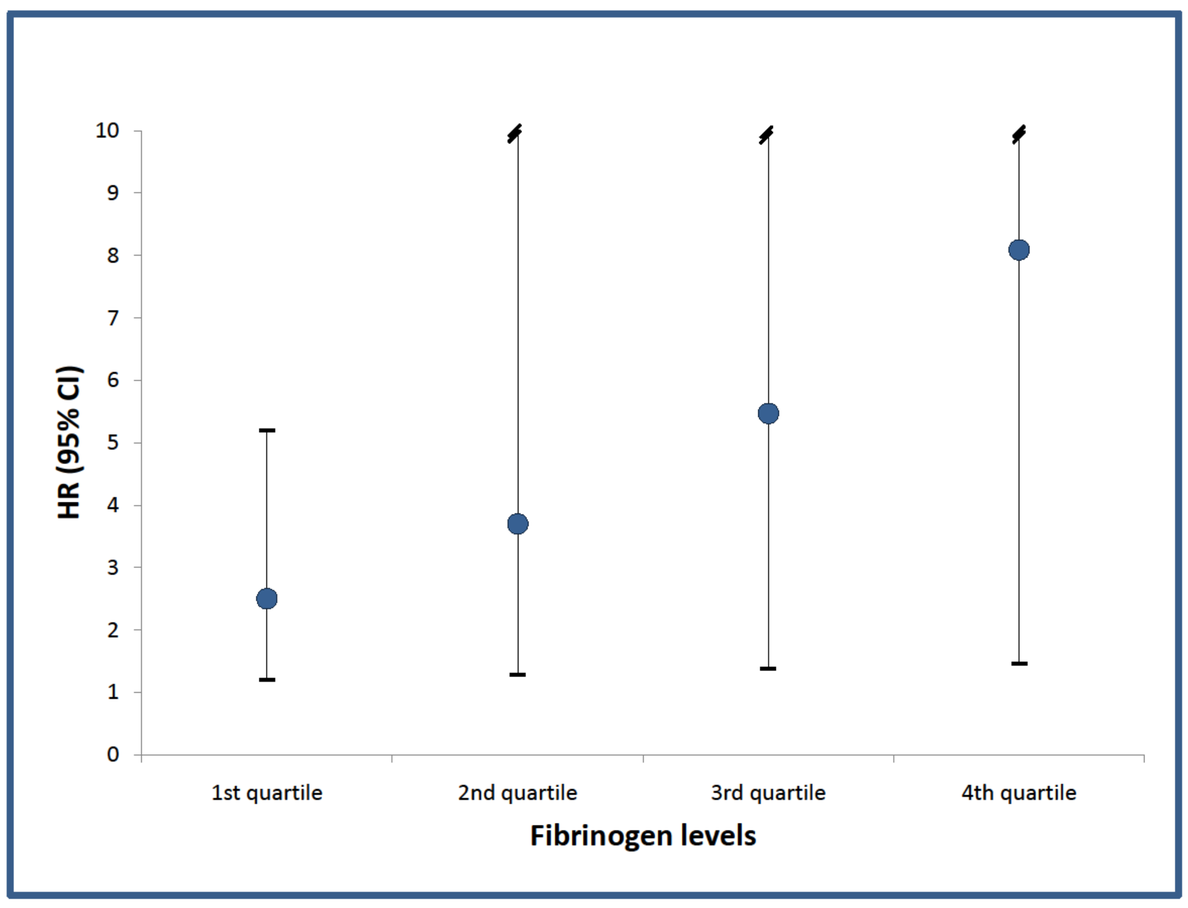


Fig. 1. Hazard ratio associated to low fT3 levels and 95% CI showing the effect modification of low hyperfibrinogenemia on all cause mortality.

Fig. 2. Hazard ratio associated to low fT3 levels and 95% CI showing the effect modification of low hyperfibrinogenemia on cardiovascular mortality.



CONCLUSIONS

Low fT3 levels amplifies the risk by hyperfibrinogenemia for all-cause and CV death in dialysis patients. Such an interaction is fully compatible with biological and clinical data in patients with subclinical and overt hypothyroidism. Further studies are required to verify if correction of low fT3 may improve clinical outcomes in this very high risk population.

REFERENCES

1. Zoccali C, Mallamaci F, Tripepi G, et al. Low triiodothyronine and survival in end-stage renal disease. Kidney Int. 2006 Aug;70(3):523-8.
2. Zoccali C, Mallamaci F, Tripepi G, et al. Fibrinogen, mortality and incident cardiovascular complications in end-stage renal failure. J Intern Med. 2003 Aug;254(2):132-9.

PROGREDIRE Work Group

Alati Giovanni, Barreca Eleonora, Boito Rosalia, Bovino Margherita, Bruzzese Vincenzo, Capria Maria, Cassani Simonetta, Chiarella Salvatore, Chippari Antonio, Cicchetti Teresa, Crifò-Gasparro Edoardo, Curti Carlo, D'Agostino Francesco, D'Anello Emanuela, De Gaudio Maria, Foscaldi Aldo, Fornaciari Cesare, Franco Corrado, Gaglioti Alfredo, Galati Domenico, Grandinetti Francesco, Gullo Maurizio, La Gamba Maria Rosa, Logozzo Domenico, Maimone Iginia, Mannino Maria Letizia, Mazzuca Elena, Mellace Agazio, Natale Giuseppe, Panuccio Vincenzo, Plutino Domenico, Pugliese Antonio, Reina Anna, Roberti Rita, Santangelo Mariagrazia, Sellaro Arcangelo, Scicchitano Rosalba, Vardè Carmela, Zingone Francesco.

51ERA-EDTA

616--SP

M) Dialysis. M8) Epidemiology, outcome research, health services research in CKD 5D.

Claudia Torino

DOI: 10.3252/pso.eu.51era.2014

Poster presented at: 51 ERA-EDTA CONGRESS AMSTERDAM THE NETHERLANDS MAY 31 JUNE 3 2014