IGF-1 levels correlate with T3 status in Chronic Heart Failure outpatients: preliminary data

V. Triggiani, M. Iacoviello, M. Leone, V.A. Giagulli, E. Guastamacchia, A. Salzano, M. Bobbio, M. Arcopinto, A. Cittadini, on behalf of TOSCA (Trattamento Ormonale nello Scompenso CArdiacco) investigators

Endocrinology and Metabolic Diseases, Interdisciplinary Department of Medicine, University of Bari, Bari, Italy; Cardiology Unit and Cardiothoracic Department, Policlinico Consorziale University Hospital, Bari, Italy; Department of Medical Translational Sciences, Federico II University, Naples, Italy; Department of Cardiac Surgery, IRCCS Policlinico S. Donato Milanese, Milan, Italy

OBJECTIVES

Increasing evidence indicates that a variety of hormones may be down-regulated in CHF patients. Impaired activity of the GH/IGF-1 axis in CHF (low IGF-1 levels, GH deficiency, and GH resistance) has been described by several studies and is associated with poor clinical status and outcome. Multiple cross-sectional studies, moreover, demonstrate that a decrease in serum T3 in CHF patients is correlated to the severity of the heart disease as assessed by the NYHA classification. Aim of this study was to evaluate a possible correlation between IGF-1 levels and T3 status in a cohort of CHF outpatients.

METHODS

Forty-eight consecutive CHF outpatients (79% males; age 61±13 years; BMI 29±5 Kg/m²; NYHA Class 2.3±0.6; 47% with ischemic disease), in stable clinical conditions from at least 30 days, in conventional electrical and medical therapy (87% taking ACE-inhibitors or angiotensin receptor blockers, 96% beta blockers, 96% diuretics, 72% anti-aldosterone drugs, 13% digitalis, 14% nitrates), were enrolled in the study. They were submitted to physical examination, electrocardiography and echocardiography. Blood samples were drawn to assess renal function, Na+, hemoglobin, NT-proBNPs, FT3, fT4, TSH, IGF-1, testosterone, DHEA and insulin levels.

RESULTS

At univariate analysis, IGF-1 showed a direct correlation with FT3 and the same was found between IGF-1 levels and fT3/fT4 ratio, whereas no correlation was found between IGF-1 and the other measures. Furthermore, at multivariate analysis, including also NYHA class, FT3 was the only independent predictor of IGF-1 levels.

CONCLUSIONS

Impaired IGF-1 and fT3 status may both represent a derangement strictly correlated to the severity of the clinical condition in CHF.

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