

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

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## 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  $61 \pm 13$  years; BMI  $29 \pm 5$  Kg/m<sup>2</sup>; NYHA Class  $2.3 \pm 0.6$ ; 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<sup>+</sup>, hemoglobin, NT-proBNPs, fT3, fT4, TSH, IGF-1, testosterone, DHEA and insulin levels.

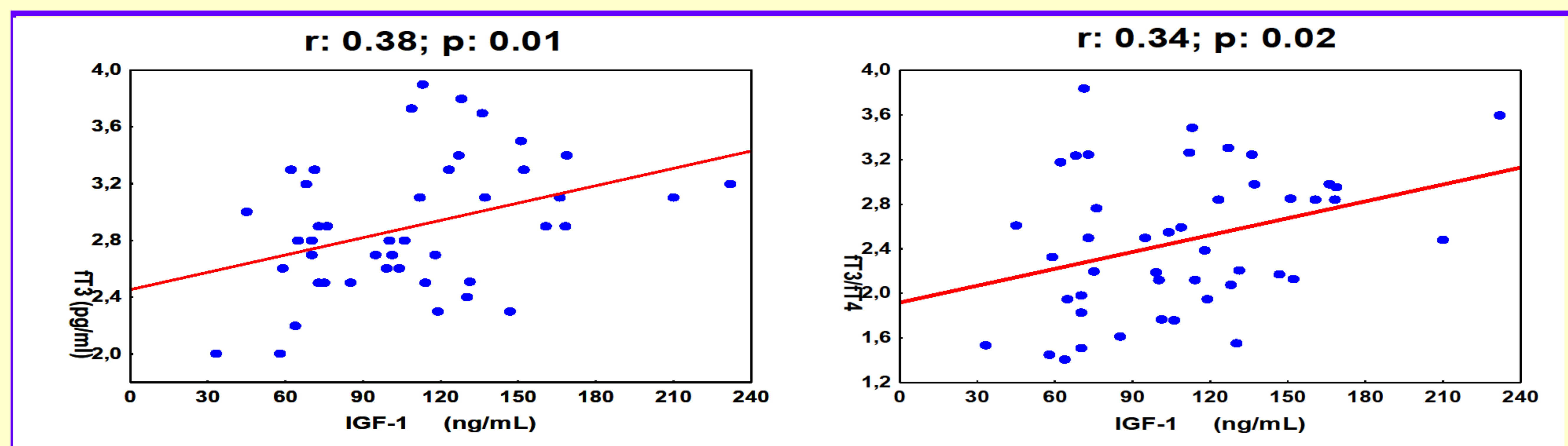


Fig.1 IGF-1 levels directly correlate to both fT3 levels and fT3/fT4 ratio

## 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.

ePoster no.EP-629 "Obesity and Cardiovascular Endocrinology"

