Evaluation of body composition and endothelial dysfunction in heart failure and chronic obstructive pulmonary disease subjects

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Introduction: Endothelial dysfunction (ED) represents a pathophysiological link between heart failure (HF) and Chronic Obstructive Pulmonary Disease (COPD). In both, there is a high levels of systemic inflammation, body composition alterations, as loss of lean mass, which is associated with a worse prognostic. Nonetheless, there is few evidence on the relationship between ED and body composition alterations.

Objective: to evaluate the body composition in subjects with ED and HF and COPD

Methods: A cross-sectional study. 233 subjects older than 40 years old with diagnosis of HF and COPD. The subjects with asthma diagnosis were excluded. Body composition was assessment by bioelectrical impedance vectorial analysis (BIVA), ED was assessment by photoplethysmography.

Results: Mean age was 68.59 ± 12.78 years old, 64.80 % had ED. ED patients were older (70.83 ± 10.57 vs 64.23 ± 15.38, p<0.001) and had resistance/height (356.604 ± 82.27 vs 336.089 ± 70.30, p=0.013), lower prevalence of men (42.6 % vs 54.2 %, p = 0.032), muscular strength (21.79 ± 8.7 vs 24.94 ± 9.1, p <0.001), phase angle (4.95 ± 1.03 vs 5.54 ± 1.06, p<0.001) and skeletal muscle mass index (8.19 ± 1.79 vs 8.84 ± 1.74, p=0.001) compared with subjects without ED. No statically significant differences were observed on ECW, ICW and, arterial hypertension and diabetes.

Conclusion: The subjects with ED present greater alterations in body composition, which gives a poor prognostic.