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Title: Tenascin-C and inflammatory markers in patients with COPD and left ventricular diastolic dysfunction

Dr. Mariana 302 Muñoz-Esquerre mmunoze@bellvitgehospital.cat MD ^{1,2}, Dr. Marta 303 López Sánchez malopez@bellvitgehospital.cat MD ^{1,2}, Ms. Ana 436 Montes amontesw@idibell.cat ², Dr. María 437 Molina-Molina mariamolina@bellvitgehospital.cat MD ^{1,2}, Prof. Frederic 438 Manresa fmanresa@bellvitgehospital.cat MD ^{1,2}, Prof. Jordi 439 Dorca jodorca@bellvitgehospital.cat MD ^{1,2} and Prof. Salud 440 Santos ssantosp@bellvitgehospital.cat MD ^{1,2}. ¹ Respiratory Medicine, Hospital de Bellvitge, Hospitalet de Llobregat, Barcelona, Spain, 08907 and ² Respiratory Research Group, IDIBELL, Hospitalet de Llobregat, Barcelona, Spain, 08907 .

Body: Left ventricular diastolic dysfunction (LVDD) is a frequent condition in COPD. Tenascin- C (TNC), an extracellular matrix protein, and metalloproteinase-9 (MMP-9) are associated with myocardial fibrosis and wall remodeling due to inflammation. The aim of the study was to determine whether the circulating levels of TNC, MMP-9 and inflammatory markers in COPD patients are associated with LVDD. Methods A total of 42 severe stable COPD patients (7 non LVDD, 29 with LVDD type I and 6 with type II) and a control group of 11 healthy subjects were included. Clinical data and blood samples were collected from all subjects. Echocardiography, lung function tests and arterial blood gases were performed in COPD patients. The serum levels of TNC, MMP-9, IL-6, IL-8 and C-Reactive Protein (CRP) were measured by ELISA. Results COPD patients without LVDD were younger and had fewer cardiovascular risk factors than the others. COPD patients had similar FEV1%, lung hyperinflation, DLco% and hypoxemia in all groups. Serum levels of IL-6 (p=0.045) and CRP (p=0.001) were higher in COPD with LVDD groups compared to non LVDD group. Circulating TNC levels were significantly increased in LVDD type II compared to type I (p=0.015).

Conclusions Inflammatory markers are increased in patients with COPD and LVDD, suggesting a link between low-grade inflammation and the presence of LVDD. High levels of TNC are related to LVDD type II
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