Cardiac Fat and Lung Function

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Impaired lung function has been linked to cardiac fat and systemic inflammation. Cardiac fat has been shown to be associated with anomalies in lung function, cardiac structure and contractility, and atherosclerosis [1].

In the Jackson heart study, a cross-sectional association of pericardial fat volumes (PFV), quantified by multidetector CT scan, with FEV1 and FVC assessed by spirometry, in 1,293 participants (54.5 ± 10.8 years; 66.4% women). Pericardial fat was associated with impaired lung function, and higher PFV were associated with higher odds of a restrictive lung pattern and lower odds of airway obstruction. Patients in the highest quartile had the highest odds of a restrictive lung pattern (OR, 1.85; 95% CI, 1.22-2.79). The authors concluded that pericardial fat is associated with lower lung function in elderly adults [2].

Previous studies have found that abdominal fat is associated with impaired lung function and a restrictive lung pattern [3-5]. PFV may mechanistically influence pulmonary function and a restrictive lung pattern through compression of the pulmonary artery, and increasing pulmonary artery systolic pressure and contributing to a restrictive lung pattern [6,7].

PFV may also reduce lung function and contribute to a restrictive lung pattern through the development of pulmonary fibrotic diseases. PFV is associated with lung function, generally independent of CRP, suggesting that may exert deleterious effects on the lungs through local inflammatory processes [8].

These studies suggest that PFV are inversely associated with lung function. Large-scale studies are needed to define these points in different populations, and are measurement can serve as a target for the treatment and prevention of impairment of lung function and cardiovascular disease.

Reference


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Received: June 08, 2015; Accepted: June 09, 2015; Published: June 15, 2015

Citation: Roever L, Resende ES (2015) Cardiac Fat and Lung Function. Transl Med 5: e130. doi:10.4172/2161-1025.1000e130

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