

Cardiac Fat and Lung Function

Roever L* and Resende ES

Federal University of Uberlândia, Department of Clinical Research, Brazil

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

1. Roever L, Casella-Filho A, Dourado PMM, Chagas ACP (2014) Ectopic Cardiac Depots, Inflammation and Cardiovascular Disease. *General Med* 2: 137.
2. Hickson DA, Liu J, Bidulescu A, Burchfiel CM, Taylor HA et al. (2011) Pericardial fat is associated with impaired lung function and a restrictive lung pattern in adults: the Jackson Heart Study. *Chest* 140:1567-73
3. Leone N, Courbon D, Thomas F, Bean K, Jégo B et al. (2009) Lung function impairment and metabolic syndrome: the critical role of abdominal obesity. *Am J Respir Crit Care Med* 179:509-516.
4. Jung DH, Shim JY, Ahn HY, Lee HR, Lee JH et al. (2010) Relationship of body composition and C-reactive protein with pulmonary function. *Respir Med* 104:1197-1203.
5. Ochs-Balcom HM, Grant BJ, Muti P, Sempos CT, et al. (2006) Pulmonary function and abdominal adiposity in the general population. *Chest* 129:853-862.
6. Iacobellis G (2009) Relation of epicardial fat thickness to right ventricular cavity size in obese subjects. *Am J Cardiol* 104:1601-1602.
7. Haque AK, Gadre S, Taylor J, Haque SA, Freeman D et al. (2008) Pulmonary and cardiovascular complications of obesity: an autopsy study of 76 obese subjects. *Arch Pathol Lab Med* 132:1397-1404.
8. Han MK, McLaughlin VV, Criner GJ, Martinez FJ (2007) Pulmonary diseases and the heart. *Circulation* 116:2992-3005

*Corresponding author: Roever L, MHS, Department of Clinical Research, Av. Pará, 1720 - Bairro Umarama, Uberlândia - MG - CEP 38400-902, Brazil, Tel: +553488039878; E-mail: leonardoroever@hotmail.com

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

Copyright: © 2015 Roever L, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited