

Supplemental Material

Table S1. Example MEDLINE search strategy.

#	Searches	Results
1	exp Adipose Tissue/ or epicardial fat.mp.	79789
2	epicardial adipose tissue.mp.	417
3	epicardial fat volume.mp.	56
4	pericardial adipose tissue.mp.	58
5	pericardial fat.mp.	242
6	pericardial fat volume.mp.	31
7	1 or 2 or 3 or 4 or 5 or 6	79916
8	exp Myocardial Contraction/ or exp Heart Failure/ or exp Heart Ventricles/ or exp Echocardiography, Doppler/ or exp Ventricular Dysfunction, Left/ or exp Diastole/ or exp Ventricular Function, Left/ or diastolic function.mp.	260853
9	diastolic dysfunction.mp.	6262
10	systolic function.mp.	9152
11	exp Myocardial Contraction/ or myocardial function.mp.	75943
12	myocardial performance.mp.	2269
13	mitral annular velocities.mp.	154
14	ejection fraction.mp.	44097
15	8 or 9 or 10 or 11 or 12 or 13 or 14	282014
16	exp Tomography, X-Ray Computed/ or cardiac ct.mp.	337987
17	coronary calcium score.mp. or exp Tomography, X-Ray Computed/	337983
18	exp Multidetector Computed Tomography/ or ccta.mp.	4630
19	16 or 17 or 18	338169
20	exp Magnetic Resonance Imaging/	346308
21	cardiac mri.mp.	1739
22	ectopic fat.mp.	396
23	7 or 22	80055
24	20 or 21	346580
25	15 and 19 and 23	53
26	15 and 23 and 24	78
27	25 or 26	122

Table S2. Newcastle - Ottawa Scale for Assessment of Cross-sectional Studies.

First Author	Year	Selection			Non - respondent s	Comparability	Outcome		Total
		Representativeness of the sample	Sampl e size	Ascertainment of exposure		Outcome groups comparable	Assessment of outcome	Correct statistical test	
Bakkum ¹	2015	*	-	**	*	*	*	*	7
Cavalcante ²	2012	*	-	**	*	**	**	*	9
Ede ³	2014	*	-	**	*	**	**	*	9
Faustino ⁴	2011	*	-	**	-	**	*	*	7
Fernando ⁵	2015	*	-	**	-	**	*	*	7
Fontes-carvalho ⁶	2014	*	-	**	*	**	**	*	9
Fox ⁷	2009	*	*	**	*	**	**	*	10
Hachiya ⁸	2014	*	-	**	*	*	*	*	7
Khawaja ⁹	2011	*	-	**	-	**	**	*	8
Konishi ¹⁰	2012	*	-	**	*	-	*	*	6
Lai ¹¹	2015	*	-	**	*	**	*	*	8
Liu ¹²	2011	*	*	**	*	**	*	*	10
Longenecker ¹³	2016	*	-	**	*	**	*	*	8
Ng ¹⁴	2016	*	-	**	*	**	*	*	8
Ruberg ¹⁵	2010	*	-	**	*	*	**	*	8
Wu ¹⁶	2015	*	-	**	*	*	**	*	8
Yamashita ¹⁷	2012	*	-	**	*	**	*	*	8

Table S3. Newcastle - Ottawa Scale for Assessment of Case Control Studies.

First Author	Year	Selection			Comparability		Exposure		Total	
		Representativeness of the sample	Adequate case definition?	Selection of controls	Definition of controls	Controls and cases comparable	Ascertainment of exposure	Same method of ascertainment for cases and controls		Non-response rate
Chekakie ¹⁸	2010	*	*	*	*	**	*	*	*	9
Doesch ¹⁹	2012	*	*	*	*	**	*	*	*	9
Doesch ²⁰	2013	*	*	*	*	**	**	*	*	10
Doesch ²¹	2010	*	*	*	*	**	**	*	*	10
Vanni ²²	2015	*	*	*	*	*	*	*	*	8
Vural ²³	2014	*	*	*	*	**	**	*	*	10

Supplemental References:

1. Bakkum MJ, Danad I, Romijn MA, Stuijzand WJ, Leonora RM, Tulevski, II, Somsen GA, Lammertsma AA, van Kuijk C, van Rossum AC, Raijmakers PG, Knaapen P. The impact of obesity on the relationship between epicardial adipose tissue, left ventricular mass and coronary microvascular function. *Eur J Nucl Med Mol Imaging*. 2015;42:1562-73.
2. Cavalcante JL, Tamarappoo BK, Hachamovitch R, Kwon DH, Alraies MC, Halliburton S, Schoenhagen P, Dey D, Berman DS, Marwick TH. Association of epicardial fat, hypertension, subclinical coronary artery disease, and metabolic syndrome with left ventricular diastolic dysfunction. *Am J Cardiol*. 2012;110:1793-8.
3. Ede H, Erkok MF, Okur A, Erbay AR. Impaired aortic elasticity and diastolic functions are associated with findings of coronary computed tomographic angiography. *Med Sci Monit*. 2014;20:2061-8.
4. Faustino AP, Paiva L, Mota P, Costa M, Leito-Marques A. Pericardial fat, a new marker of impaired left ventricle diastolic dysfunction. *European Journal of Heart Failure Supplements* 2011;10:S248.
5. Fernando RS, Syed MA, Wilber D, Singh S, Teme T, Rabbat M. Epicardial adipose tissue volume by cardiac magnetic resonance imaging predicts abnormal myocardial relaxation in patients with atrial fibrillation. *Journal of Cardiovascular Magnetic Resonance*. 2015;17:P352.
6. Fontes-Carvalho R, Fontes-Oliveira M, Sampaio F, Mancio J, Bettencourt N, Teixeira M, Rocha Goncalves F, Gama V, Leite-Moreira A. Influence of epicardial and visceral fat on left ventricular diastolic and systolic functions in patients after myocardial infarction. *Am J Cardiol*. 2014;114:1663-9.
7. Fox CS, Gona P, Hoffmann U, Porter SA, Salton CJ, Massaro JM, Levy D, Larson MG, D'Agostino RB, Sr., O'Donnell CJ, Manning WJ. Pericardial fat, intrathoracic fat, and measures of left ventricular structure and function: the Framingham Heart Study. *Circulation*. 2009;119:1586-91.
8. Hachiya K, Fukuta H, Wakami K, Goto T, Tani T, Ohte N. Relation of epicardial fat to central aortic pressure and left ventricular diastolic function in patients with known or suspected coronary artery disease. *Int J Cardiovasc Imaging*. 2014;30:1393-8.
9. Khawaja T, Greer C, Chokshi A, Chavarria N, Thadani S, Jones M, Schaeffle K, Bhatia K, Collado JE, Shimbo D, Einstein AJ, Schulze PC. Epicardial fat volume in patients with left ventricular systolic dysfunction. *Am J Cardiol*. 2011;108:397-401.
10. Konishi M, Sugiyama S, Sugamura K, Nozaki T, Matsubara J, Akiyama E, Utsunomiya D, Matsuzawa Y, Yamashita Y, Kimura K, Umemura S and Ogawa H. Accumulation of pericardial fat correlates with left ventricular diastolic dysfunction in patients with normal ejection fraction. *J Cardiol*. 2012;59:344-51.
11. Lai YH, Hou CJ, Yun CH, Sung KT, Su CH, Wu TH, Yang FS, Hung TC, Hung CL, Bezerra HG, Yeh HI. The association among MDCT-derived three-dimensional visceral adiposities on cardiac diastology and dyssynchrony in asymptomatic population. *BMC Cardiovasc Disord*. 2015;15:142.
12. Liu J, Fox CS, Hickson DA, May WL, Ding J, Carr JJ, Taylor HA. Pericardial fat and echocardiographic measures of cardiac abnormalities: the Jackson Heart Study. *Diabetes Care*. 2011;34:341-6.
13. Longenecker CAK, S; Serhal, M; Kinley, B; Labbato, D; McComsey, GA. Diastolic Function Correlates With Pericardial Fat [fat around the heart] and Vascular Remodeling in HIV. *Conference on Retroviruses and Opportunistic Infections (CROI)*. 2016.
14. Ng AC, Goo SY, Roche N, van der Geest RJ, Wang WY. Epicardial Adipose Tissue Volume and Left Ventricular Myocardial Function Using 3-Dimensional Speckle Tracking Echocardiography. *Can J Cardiol*. 2016;32:1485-1492.
15. Ruberg FL, Chen Z, Hua N, Bigornia S, Guo Z, Hallock K, Jara H, LaValley M, Phinikaridou A, Qiao Y, Viereck J, Apovian CM, Hamilton JA. The relationship of ectopic lipid accumulation to cardiac and vascular function in obesity and metabolic syndrome. *Obesity (Silver Spring)*. 2010;18:1116-21.
16. Wu CK, Tsai HY, Su MY, Wu YF, Hwang JJ, Tseng WY, Lin JL, Lin LY. Pericardial fat is associated with ventricular tachyarrhythmia and mortality in patients with systolic heart failure. *Atherosclerosis*. 2015;241:607-14.
17. Yamashita KO, Ebara S, Yamamoto MH, Obara C. Increased epicardial adipose tissue are associated with left ventricular diastolic dysfunction. *Journal of the American College of Cardiology*. 2012;59:E1349.
18. Al Chekakie MO, Welles CC, Metoyer R, Ibrahim A, Shapira AR, Cytron J, Santucci P, Wilber DJ, Akar JG. Pericardial fat is independently associated with human atrial fibrillation. *J Am Coll Cardiol*. 2010;56:784-8.
19. Doesch C, Hagi D, Suselbeck T, Schoenberg SO, Borggreffe M, Papavassiliu T. Impact of Functional, Morphological and Clinical Parameters on Epicardial Adipose Tissue in Patients With Coronary Artery Disease. *Circulation Journal*. 2012;76:2426-2434.

20. Doesch C, Streitner F, Bellm S, Suselbeck T, Haghi D, Heggemann F, Schoenberg SO, Michaely H, Borggrefe M, Papavassiliu T. Epicardial adipose tissue assessed by cardiac magnetic resonance imaging in patients with heart failure due to dilated cardiomyopathy. *Obesity (Silver Spring)*. 2013;21:E253-61.
21. Doesch C, Haghi D, Fluchter S, Suselbeck T, Schoenberg SO, Michaely H, Borggrefe M, Papavassiliu T. Epicardial adipose tissue in patients with heart failure. *J Cardiovasc Magn Reson*. 2010;12:40.
22. Vanni EM, Faletti R, Morello M, Mezzabotta L, Battisti G, Frea S, Cannillo M, Mosso E, Rosso C, Bergamasco L, Rizzetto M, Bugianesi E. Increased Epicardial Fat and Early Signs of Impaired Diastolic and Systolic Left Ventricular Function in Non-diabetic, normotensive patients with nonalcoholic fatty liver disease. *Journal of Hepatology*. 2015;62:S745.
23. Vural M, Talu A, Sahin D, Elalmis OU, Durmaz HA, Uyanik S, Dolek BA. Evaluation of the relationship between epicardial fat volume and left ventricular diastolic dysfunction. *Jpn J Radiol*. 2014;32:331-9.