EP1_18

Epicardial Fat and Diastolic Filling in Subjects without Heart Disease

Saleem Dabbah, Helena Komarov, Marmor Alon, Nimer Assy
Cardiology and Liver Unit, Ziv Medical Center, Israel

Introduction:

Epicardial fat (EF) is part of the visceral fat, and is correlated to ultrasound measurements of central fat and waist circumference. It also has been found to correlate with coronary artery disease. In diabetics and morbidly obese subjects, EF was associated with diastolic dysfunction.

Aim:

to test the association of EF and diastolic filling in subjects without heart disease.

Methods:

In volunteers without cardiac disease, EF was measured by Echocardiography, from parasternal long axis (LAX) and short axis (SAX) views, as the echo-free space betwen the myocardium and visceral pericardium located anterior to the right ventricle free wall at end diastole.

Diastolic filling was assessed by measuring/calculating the following:

1- mitral inflow: (Ewave, A wave, E/A ratio, A duration).

2- pulmonary vein flow: (S wave, D wave, S/D ratio, S wave VTI, D wave VTI, systolic filling fraction, Ar velocity, Ar-A duration).

3-Tissue Doppler Imaging (TDI): (septal e', lateral e', E/e').

4-Color M-mode: flow propagation velocity (Vp).

Results:

73 subjects, age 52±9, male gender 82%, diabetes 11%, hypertension 32%, left ventricular mass index 73±13. Thickness of EF in LAX was 2.8±1.3mm and in SAX was 2.9±1.1 ($r=0.6$, $P<0.001$). EF in SAX was significantly correlated only with Ar velocity ($r=0.27$, $p=0.025$).

EF in LAX was significantly correlated with E/A ratio ($r= -0.25$, $p=0.034$), D wave velocity ($r= -0.3$, $p=0.012$), D wave VTI ($r= -0.244$, $p=0.039$), Systolic fraction ($r=0.241$, $p=0.041$), Ar ($r=0.243$, $p=0.041$), septal e' ($r= -0.27$, $p=0.021$), lateral e' ($r= -0.25$, $p=0.033$), Vp ($r= -0.25$, $p=0.038$). after adjustment for age, gender, diabetes, hypertension, left ventricle mass index, correlations between EF in LAX and E/A ratio, D wave velocity, Ar velocity, septal e' , lateral e' and Vp were not statistically significant. Only correlation with D wave VTI and systolic fraction remained statisticaly significant ($p=0.028$ and $p=0.029$, respectively).

Conclusion:

EF thickness measured by echocardiography is correlated with echocardiographic indices of diastolic filling. This correlation -most probably- is not independent, but mediated other confounders (mainly age, diabetes and hypertension).