

E-poster Presentation

Obesity and cardiovascular risk: The role of epicardial fat measured by echocardiography

Purpose

The aim of this study was to investigate the role of epicardial fat as a marker of increased cardiovascular risk in obese patients.

Methods

clinical evaluation, physical examination and EKG. The weigh, height, BMI, waist circumference, cardiovascular risk factors and previous cardiovascular events were recorded. All patients underwent transthoracic echocardiogram and ultrasound scan of Supra-Aortic Trunks (SAT) in order to evaluate carotid intima Media Thickness (IMT).

Results

The mean age was 47.85 ± 11.8 years and 27 (51.9%) were of male gender. The BMI and waist circumference showed respectively a mean value of 40.6 ± 8.3 kg/m² and 119.2 ± 13.2 cm. Previous cardiovascular events (acute myocardial

infarction and /or unstable angina) were recorded in 15 patients (28, 8%). The mean thickness of the epicardial fat was 6.4 ± 3.14 mm. 34 patients presented diastolic dysfunction (20 grade Class 1, 14 Class II dysfunction). Thickness of epicardial fat was statistically related to increased waist circumference ($p = 0.032$), systemic arterial hypertension ($p = 0.036$)m male gender ($p = 0.023$), previous cardiovascular events ($p=0.038$), reduced E/A ratio ($p = 0.017$) and increased thickness of interventricular septum in diastole ($p = 0.001$). There was also a significant relationship between increased epicardial fat and the presence of preclinical atherosclerosis assessed by ultrasound scan of SAT ($p = 0.037$). Furthermore, the multivariate analysis showed an independent association between epicardial fat, increased waist circumference ($p = 0.0038$) and low E/A ratio ($p = 0.0446$)



Conclusions

Epicardial fat could represent a new marker of cardiovascular risk even more accurate than visceral fat to which is nevertheless related. Particularly, our study demonstrate that it is independently associated with the presence of diastolic dysfunction. The measurement of epicardial fat by echocardiography, non-invasive, easily repeatable and low cost, could allow a more precise stratification of cardiovascular risk in obese patients. This could identify a subgroup of patients at high risk to treat with tailored prevention program and targeted therapeutic approach.