

Fat around the heart boosts heart-attack risk

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Recently, interest in the fat around the heart -so called pericardial fat- is rapidly growing. Even a thin person can have pericardial fat. Several studies suggest that pericardial fat induces inflammation of the artery wall by secretion of pro-inflammatory proteins and plays a role in the pathogenesis of coronary artery disease. However, there is no information regarding the impact of pericardial fat on coronary arterial remodeling and plaque vulnerability- related with acute coronary syndrome.

"The aim of our study was to evaluate the relationship between pericardial fat and intravascular ultrasound (IVUS) findings, mainly coronary remodeling, in patients with [coronary artery disease](#)," said Dr Ogura.

One hundred and eight consecutive patients with de novo lesions located in native coronary artery were studied. The pericardial fat thickness on the right ventricle was measured using transthoracic echocardiography, and arterial remodeling of culprit lesion was assessed by pre-interventional IVUS. The remodeling index (RI) was calculated as lesion divided by the reference external elastic membrane cross-sectional area, Positive remodeling (PR) was defined as $RI > 1.05$, intermediate remodeling (IR) as between 0.95 and 1.05, and negative remodeling (NR) as 10mm , $n=55$) were significantly associated with high [body mass index](#) ($25.2 \pm 3.6 \text{kg/m}^2$ vs. $23.9 \pm 2.8 \text{kg/m}^2$, $p=0.04$), high plasma triglyceride level ($189.1 \pm 103.8 \text{mg/dl}$ vs. $146.1 \pm 80.9 \text{mg/dl}$, $p=0.02$), and high plasma urinary acid level ($6.8 \pm 1.5 \text{mg/dl}$ vs. $5.9 \pm 1.5 \text{mg/dl}$, $p=0.02$). PR and noncalcified plaque were more common in patients with a higher

pericardial thickness (PR ;43.6% vs. 18.9%, $p=0.02$. non-calcified plaque; 89.1% vs.66.0%, $p=0.004$).

There was no significant relationship between pericardial fat thickness and plaque eccentricity. Multivariate analysis showed that high pericardial fat thickness was an independent factor affecting coronary positive remodeling (odds ratio (OR):3.05, $p=0.02$).

In conclusion, pericardial fat thickness was significantly correlated with the coronary arterial remodeling and non calcified plaque - related with [acute coronary syndrome](#).

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