Abstract: **P5303**

**Relationship of the dynamics of serum collagen and epicardial adipose tissue in patients with coronary heart disease and visceral obesity**

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**Topic(s):**
Obesity

**Citation:**
Purpose: study of the effect of epicardial adipose tissue and in serum collagen in patients with myocardial infarction depending on the presence of visceral obesity.

Methods: 88 patients with CVD were assessed and divided into two groups based on the presence of visceral obesity (VO). Magnetic resonance imaging (MRI) was used to determine the area of the visceral (VAT) and subcutaneous adipose tissue (SAT) of the abdominal region, the thickness of epicardial adipose tissue, and the percentage of myocardial cardiac fibrosis a year after MI. VO was verified when the area of VAT >130 cm². We investigated changes in serum collagen: ?ollagen protein type I (COL-1), N-terminal propeptide of procollagen type III (PIIINP) and C-terminal propeptide of procollagen type I (PICP). All study was carried out in compliance with the Helsinki Declaration, and its protocol was approved by the Ethical Committee of Research Institute. Statistical analysis was performed using Statistica 10.0. All patients gave written informed consent to participate in the study.

Results: With VO, the thickness of the left ventricular epicardial tissue (EATLv) was 1.75 times greater, and that of the right ventricle (EATrv), 1.43 times more than in patients without VO. In the group of patients with VO, the presence of a direct correlation was established between the magnitude of the area of VAT and EATLv (r = 0.26, p = 0.02), EATrv (r = 0.26, p = 0.01). The results indicate that myocardial damage on the background of an acute MI is characterized by higher concentrations of COL-1 (29065 pg/ml), PICP (638 ng/ml) and PIIINP (31431 pg/ml), in the presence of VO during the hospital period of MI, and exceeded the figures of patients without VO 2.15, 1.07 and 1.19 times, respectively. One year after MI, the COL 1 level in both groups decreased compared with the acute MI period (1.68 times in patients without VO and 2.75 times in patients with VO), it still remained higher in patients with VO in 1.4 times higher. And the level of PICP was not significantly different on the first day of MI and a year after suffering MI in the studied groups. PIIINP decreased only in the group of patients without VO.

The data of the correlation analysis showed that EATLv was in direct connection with the level of serum collagen in patients with VO: EATLv - COL-1 (1 day (r = 0.73; p = 0.01), 1 year (r = -0.84; p = 0.00); EATLv - PICP (1 day (r = 0.63; p = 0.01), 1 year (r = 0.57; p = 0.03) and EATLv - PIIINP (1 day (r = 0.61; p = 0.03), 1 year (r = 0.31; p = 0.01).

Conclusions: thus, the presence of VO in patients with MI is associated with higher concentrations of COL 1, PICP, PIIINP, both in the acute period of MI, and one year after a coronary catastrophe. The thickness of EAT is directly dependent on the degree of VO, and the concentration of COL-1, PICP and PIIINP on the value of EATLv.