Epikardijalno masno tkivo u koronarnoj bolesti srca i fibrilaciji atrija

Epicardial fat in coronary artery disease and atrial fibrillation

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Debljina je dobro poznat rizični faktor za razvoj kardiovaskularne bolesti, osobito kada je vezana uz centralnu distribuciju masnog tkiva. Mnoga istraživanja danas fokusirana su na karakteristike visceralnog masnog tkiva, no direktna uzročna uloga visceralne masti u kardiovaskularnoj bolesti još mora biti razjašnjena. Moderne metode oslikavanja omogućavaju prikaz manjih depoa masnog tkiva koje može utjecati na rad važnih organa lokalno: epikardijalna mast i utjcaj na miokard, perivaskularna mast i krne žile. Mehanizmi koji povezuju distribuciju masti i kardiovaskularni rizik su kompleksni i uključuju: promjene u metabolizmu glukoze i lipida, utjecaj na čimbenike rizika (arterijska hipertenzija, upala), a svakako treba spomenuti sistemsko i lokalno djelovanje adipokina izlučenih iz masnog tkiva. Epikardijalna mast je depo visceralnog masnog tkiva koje je u direktnom kontaktu sa miokardom s kojim dijeli mikrocirkulaciju i metabolički je aktivno tkivo. Mnoštvo radova bavi se ravnotežom proaterosklerotsko-inflamatorne i protektivne aktivnosti masnog tkiva. U studiji Mazurek *i sur.* obrađeni su podaci 42 bolesnika upućenih na aortokoronarno premoštenje. U uzorcima epikardijalnog i supkutanog masnog tkiva utvrđena je koncentracija upalnih citokina PCR i ELISA metodom. Jasno je vidljiva povišena koncentracija upalnih citokina u epikardijalnom masnom tkivu. Iz dobro poznate Framingham Heart studije, na više od 1000 pacijenata, vidljivo je da je epikardijalno masno tkivo povezano s količinom kalcija u koronarnim arterijama. U meta-analizi 9 studija na 3772 bolesnika uočena je povezanost količine epikardijalnog masnog tkiva sa postojanjem plakova višeg rizika u koronarnim arterijama. Postavlja se mogućnost kvantificiranja količine masnog tkiva i uključivanje dobivenih mjerenja u procjenu rizika kardiovaskularne bolesti. U studiji Mahabadija *i sur.* objavljenoj u JACC-u, uključeno je 4093 bolesnika, utvrđena je jasna povezanost količine epikardijalnog masnog tkiva i kardiovaskulanog rizika te incidencije infarkta miokarda.[1] Brojne studije upućuju na povezanost volumena epikardijalne masti i remodeliranje atrija. Citokini induciraju fibrozu atrijskog zida, upalu u miokardu te uzrokuju oksidativni stres što sve pogoduje pojavi fibrilacije atrija.

Obesity is a well-known risk factor in cardiovascular disease development especially in cases with central distribution of fat tissue. Research is mainly focused on visceral fat tissue characteristics, but visceral fat role in cardiovascular disease has yet to be established. In modern era, cardiac imaging methods reveals fat tissue depots, which can influence the work of central organs locally: epicardial fat with influence on the heart, perivascular fat and vascular structures. Mechanisms linking fat distribution and cardiovascular risk are complex and includes: fat and glucose metabolism changes, influence on risk factors (hypertension, inflammation), systemic and local adipokine action. Epicardial fat is a visceral fat tissue depot directly linked to myocardial tissue through conjucted microcirculation and is metabolically active. Recent literature is focused on balancing proatherosclerotic - inflammatory and protective activity of fat tissue. Mazurek *et al* showed a study on 42 patients referred to coronary artery bypass grafting in which proinflammatory cytokines concentration in epicardial and subcutaneous fat tissue was measured with PCR and ELISA method. They found higher concentrations of proinflammatory adipokines in epicardial fat tissue. Well known Framingham Heart Study on more than 1000 pts revealed liaison of epicardial fat tissue volume and calcium scoring in coronary arteries. Meta-analysis of 9 studies with 3992 pats showed good correlation of high-risk plaques in coronary arteries and fat tissue volume. Quantification of epicardial fat tissue volumes could be implemented in cardiovascular risk stratification. Study published in JACC by Mahabadi *et al* included 4093 pts and showed good correlation of epicardial fat tissue volume and cardiovascular risk with higher incidence of myocardial infarction in pts with larger epicardial fat volumes.[1] Lot of studies referred to epicardial fat volume and atrial remodeling. Cytokines has been proved to induce atrial wall fibrosis, myocardial inflammation and oxidative stress, factors known to be causative in atrial fibrillation incidence.

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LITERATURE

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