Abstract: P1232

Epicardial adipose tissue volume and cardiac remodelling: A systematic review and meta-analysis

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Echocardiography: Systolic and Diastolic Function

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Introduction: Many studies have explored the hypothesis that epicardial adipose tissue (EAT) accumulation adversely affects cardiac remodelling. We aimed to assess, through a systematic review and meta-analysis, whether EAT is independently associated with left atrial (LA) and left ventricular (LV) structure and function.

Methods: We searched MEDLINE, Scopus, and Web of Science for studies evaluating the association of EAT volume quantified by computed tomography with cardiac morphology and function. We used DerSimonian and Laird random-effects models to summarize the effect of 10 mL variation of EAT in LA size, LV mass, LV diastolic and systolic functions parameters and presence of diastolic dysfunction. We quantified heterogeneity using I² statistic.

Results: Nineteen studies met our search criteria. Quantitative analysis by cardiac parameters, including LA dimension (n=2719), LV mass (n=2519), diastolic function (n=3741), and systolic function (n=2037) showed that EAT was associated with LA dilation (pooled B-coefficient: 0.12mm; 95% confidence interval [95%CI]: 0.08 to 0.17; I²: 97%), LV hypertrophy (pooled B-coefficient: 1.21g; 95% CI: 0.63 to 1.79; I²: 77%), presence of diastolic dysfunction (odds ratio: 1.35; 95% CI: 1.16 to 1.57; I²: 0%), higher E/E’ ratio (pooled B-coefficient: 0.28cm/s; 95% CI: 0.08 to 0.49; I²: 67%), lower E’ velocity (pooled B-coefficient: -0.16cm/s; 95% CI: -0.22 to -0.09; I²: 43%), and lower E/A ratio (pooled B-coefficient: -0.01; 95% CI: -0.02 to -0.001; I²: 70%), independently of body mass index. There was no association between EAT volume and LV systolic function (Figure 1).

Conclusions: EAT volume measured by computed tomography was independently associated with LA dilation, LV hypertrophy, and diastolic dysfunction.
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Conclusions: EAT volume measured by computed tomography was independently associated with LA dilation, LV hypertrophy, and diastolic dysfunction.

Cardiac Remodelling Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B-coef. (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA dimension</td>
<td>0.12 (0.08, 0.17)</td>
</tr>
<tr>
<td>LV mass</td>
<td>1.21 (0.63, 1.79)</td>
</tr>
<tr>
<td>LV diastolic dysfunction</td>
<td>0.30 (0.15, 0.45)</td>
</tr>
<tr>
<td>Septal E’</td>
<td>-0.16 (-0.22, -0.09)</td>
</tr>
<tr>
<td>E/E’ ratio</td>
<td>0.28 (0.08, 0.49)</td>
</tr>
<tr>
<td>LV ejection fraction</td>
<td>-0.08 (-0.28, 0.12)</td>
</tr>
</tbody>
</table>