Abstract: P1249

Prognostic impact of sarcopenia on major adverse cardiovascular outcomes in coronary artery disease patients undergoing successful percutaneous coronary intervention

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Background: Sarcopenia is an emerging marker of frailty. Its prognostic impact on atherosclerotic cardiovascular disease (ASCVD) requires further investigation.

Purpose: We investigated the long-term prognostic impact of computed tomography (CT)-determined sarcopenia in patients with coronary artery disease (CAD).

Methods: Total 475 CAD patients those who underwent successful percutaneous coronary intervention (PCI) and performed CT scan within 30 days of PCI were enrolled. The cross-sectional area of skeletal muscle at the first lumbar vertebra (L1) level was measured. Sarcopenia was defined as L1 skeletal muscle index of less than 34.60 cm²/m² for men and of less than 25.90 cm²/m² for women. Primary outcome was 3-year all-cause mortality and secondary outcome was 3-year major adverse cardiovascular event (MACE), a composite of all-cause mortality, any myocardial infarction, and repeat revascularization.

Results: Sarcopenia was present in 214 (45.1%) of 475 patients. The incidence of 3-year all-cause mortality and MACE was significantly higher in patients with sarcopenia than in those without sarcopenia (17.7% vs. 5.7%, p<0.001; and 35.0% vs. 11.2%, p<0.001, respectively). In the fully adjusted multivariable analysis, sarcopenia was an independent predictor of higher risk of 3-year all-cause mortality (odds ratio [OR]: 2.98; 95% confidence interval [CI]: 1.35 to 6.58, p=0.007) and MACE (OR: 4.39; 95% CI: 2.49 to 7.73, p<0.001). The results were consistent after propensity-score matched analysis with 100 pairs of study population (C-statistics = 0.868).

Conclusion: Sarcopenia is a useful predictor of adverse clinical outcomes in patients with CAD undergoing PCI. CT-determined sarcopenia may further aid in risk stratification and decision-making for patients with established ASCVD.

Kaplan-Meier analysis of 3-year outcomes

<table>
<thead>
<tr>
<th></th>
<th>Overall population</th>
<th>PSM population</th>
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<tbody>
<tr>
<td></td>
<td>Sarcopenia (n=214)</td>
<td>No sarcopenia (n=261)</td>
</tr>
<tr>
<td>All-cause mortality</td>
<td>36 (17.7)</td>
<td>14 (5.7)</td>
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<tr>
<td>Non-fatal MI</td>
<td>12 (6.6)</td>
<td>5 (2.0)</td>
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<tr>
<td>Repeat revascularization</td>
<td>32 (20.3)</td>
<td>14 (6.2)</td>
</tr>
<tr>
<td>Total MACEs</td>
<td>68 (35.0)</td>
<td>27 (11.2)</td>
</tr>
</tbody>
</table>

Data are expressed as n (%). MACE = major adverse cardiovascular event; MI = myocardial infarction; PSM = propensity-score matched.
CT-determined sarcopenia by L1 SMI

Sarcopenia

No sarcopenia

Clinical impact of sarcopenia in coronary artery disease

Three-year all-cause mortality (overall population)

Three-year MACE (overall population)

Clinical impact of sarcopenia on CAD